

11

NOISE AND SONIC BOOM IMPACT TECHNOLOGY

Initial Development of an Assessment System for Aircraft Noise (ASAN): Software Listing

Volume IV of IV Volumes

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Air Force Systems Command
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Appendix A SCREEN DESCRIPTION FILES

This appendix contains the screen description files from which the U parser produces C code that can be compiled and linked with other object modules to produce an executable image. These files describe the appearance of the user interaction screens, and also determine what action the program takes when users elect specific actions.

A.1 Screen Description File for Introductory Portions of ASAN

```
-INCLUDE STATISHEST FOR THE ASAN typodof DEFINITIONS RESDED TO
         COMPILE USUBS.C WITHOUT INCURRING THE WRATE OF THE COMPILER
DECLUDE ASAFTYPE.E
INCLUDE ASAN.E
-DECLARATIONS FOR INTRODUCTORY SCHOOL
 EXTRLOCK introtat2 (
   aum columns 76
                 tatblk/introtat.tat
WINDOW introvindow1 (
        col
              20.0 78
    textblock introtat2, 1, 1
       veriable
      pickeble
                   100
                   "enimals remain in list"
VARIABLE qual_estries {
  type INTEGER
  formet +5d
   DATCM qualif (
                  qual_catrics, 0, 10
      pickeble
                   "Thus far"
      trailer
                   "extrins qualify"
   DATOM aumofait (
     BER TOWN
      num columns 33
      variable qual entries, 0 , 0 trailer "citations meeting
      trailer
```

```
pickable 200
  VARIABLE GEFFGIT (
      type INTEGER
      formet 45d
     DATOM ourreit (
         num rows 1
         variable carroit, 0 , 22
leader "Display shows number"
         leader "Dis
trailer "of"
pickable E0
  VARIABLE when {
foundis "VARCHAR datep.err"
     type STRING
formet 44s
     DATOM when (
        nun rows 1
nun columns 16
         variable when, 0 , 11
leader "Published"
        pickable 20
  TEXTLINE concechtat ("CANCEL SEARCE")
  MONTH CAROLON (
     aum_rous 1
     num_columns 17
     textline concechtzt, 0,2
helpfile help/coclerch.hlp
 TEXTLINE contactxt ("Interrogate point-of-contact database")
 BUTTON contacts {
     aum_columns 40
textline contactat, 0 ,2
helpfile help/contacts.hlp
 TEXTLESS humantat ("Interrogate human effects ditation index")
 BUTTON human (
    aum columns 50
taxtline humantit, 0 ,2
helpfile help/humcit.hlp
TEXTLINE maineltxt {"Interrogate animal effects ditation index"}
BUTTON animal (
     BER_TOWN
     aum_columns 50
    textline mnimeltat, 0 ,2
helpfile help/ammlait.hlp
TEXTLES structut ("Interrogate structural effects citation index")
BOTTOM struct (
    awa_rows 1
awa_columns 50
    taxtline structxt, 0 ,2
helpfile help/structit.hlp
TEXTLINE somistrt ("Interrogate noise & somis boom modeling sitution index")
MUTTON sonic (
    ava rows 1
    textline
                 somictat, 0 ,2
```

```
helpfile help/somic.hlp
  THEFALINE legislatit ("Interrogate legislative database")
  BUTTOW logislat (
     num rows 1
num columns 40
textline legislatzt, 0 ,2
helpfile help/legislat.hlp
 TENTEDEE selectebtat (
  "You can now interrogate these ASAN detabases:"}
 HIROW inquiry (
      ME POWS
      awa columns
      line
                       0,0, 0,77
      tostlino
                       selectobert,
                                        3,10, "CALL quetup",
"MEN SCREEN cont
      bettoe
                       contacts,
      button
                      bures,
                                        4,10, "CALL quetup",
                                               "NEW SCHEEN hoitlearn"
      batton
                                       5,10, "CALL quetup",
"MEN SCREEN acitiscra"
                      cairel.
      button
                                       6,10, "CALL quetup",
"MEN_SCREEN scitisors"
     button
                      scale,
                                       7,10, "CALL quetup",
                                       "HENT SCREEN moitisorn"
8,10, "HENT SCREEN legislatscreen"
     button
                      legislat,
 ) paids massa
    mainscreen TRS
    border
                   YES
    window
                  imquiry, 10,1
majoraction4, 19,1
introvinciow1, 1, 1
     window
                     Declarations for POINT OF CONTACT DATABASE SCREEN
 THITLES steerghtat ("START SEARCE")
 SUTTON stsearch (
   htm_rows 1
   textline stsearchtxt, 0 ,2
helpfile help/stsearch.hlp
TENTILDE coff016tst ("AFT-014 attributes")
BUTTON caff814 (
   RUM POWS 1
RUM Columns 20
   taxtline onff816txt, 0 ,2
helpfile help/onff814.hlp
TEXTLES stribeltst ("Tribel")
SUFFOR ctribel (
   awa_rows 1
   aum_columns 9
textline otribultzt, 0 ,2
helpfile help/otribul.hlp
TENTLISE cailitarytet ("Military")
SOFFOR cailitary {
   aum_columns 11
  testline calliterytat, 0 ,2
helpfile help/calliter.hlp
```

```
}
  TEXTLINE ofederaltat ("Federal")
  BOTTOM ofederal (
     num cows 1
num columns 10
textiins ofederaltxt, 0 ,2
helpfile help/ofederal.hlp
  TENTLINE ostatotut ("State")
  SUTTON estate (
     aus ross 1
      avan columns &
     taxtline estatetxt, 0 ,2
helpfile help/ostate.hlp
  TEXTLES occurtytat ("County")
  BUTTON ocounty (
     AND POWS 1
     avm columns 9
     taxtline cocuntytxt, 0 ,2
helpfile help/cocunty.hlp
  TEXTLES ocitytet ("City")
 BUTTON GELLY (
     num rows 1
     textline coitytet, 0 ,2
helpfile help/coity.hlp
 VARIABLE address (
    type STRING
formet 4-25s
 DATOM . address {
       Aus columns 77
       variable address, 0 ,28
leader "City and/or state address: "
helpfile help/address.hlp
 VARIABLE contamn {
type STRING
format 4-15s
DATOM continum {
   aum_rows 1
   aum_columns 77
      variable contagn, 0 ,28
leader "Point of contagt last name:"
helpfile help/contagn.hlp
VARIABLE affected {
    type STRING
format 4-15s
    DATUM affrales (
        SMOT TOMS
       BWB Columns 50
      variable affseled, 0 , 33
leader "Affiliation currently selected:"
pickable 20
TEXTLINE agentst ("Agency:")
TEXTLINE secrebtat ("Secreb by:")
WINDOW contactsearch {
       num rows 17
```

```
line
                           0,0, 0,77
           textline
                           searchtst, 1, 1
           det va
                           ocetnen,
                                          3, 1
                           address,
                                          4, 1
           textline
                           egentat,
                                          B. 1
                           caity,
                                          B. 10.
                                                  "CALL metaff 0"
           button
                           scounty,
                                                   "CALL setaff 1"
                                          5, 10,
           button
                           astate,
                                          5,27, "CALL setaff 2"
           button
                           ofederal,
                                          5,37,
                                                  "CALL setaff 3"
           button
                           cmilitary, 5,48,
                                                  "CALL setaff 4"
           button
                           stribel,
                          otribal, 5, so, affeeled, 6, 1 caffeld, 9, 1, "MRW SCREEN contatsearch" stsearch, 16, 1, "CALL pearup", "CALL quetup", "REW_SCREEN dbing"
                                          8, 60,
                                                  "CALL setaff 5"
           detre
           buttoe
           betton
          button
         }
  SCREEN contactsureen { title "POINT OF CONTACT DATABAGE"
                     contactsearch, 2,1
majoraction4, 19,1
       window
              Point of contact attribute search screen
  TEXTLES minoratet ("Minor attributes")
  TRITLIEE scrolltxt ("Scroll window for more alternatives")
  TEXTRLOCK minorat (
       filenome tutblk/minor.txt
                       10
35
       PART LOSS
       nem columns
       border
 WINDOW minorat {
       ZEE TOUS
                         10
       aum_columns
textline
textblock
                      35
                     minoratri, 1,0
minorat, 2,0
serolltri, 12,0
 FERTELOCK majoret (
filename txtblk/major.txt
hum_rows 10
num_columns 35
border THS
 VARIABLE minorat (
   type STRING
format 4-45s
DATEM minoret {
      variable minoret, 0 ,22
leader "Type minor attribute:"
helpfile help/minor.hlp
VARIABLE majoret (
     type STRING
format 4-15s
DATCM majorat (
     awa_rows 1
      num_columns
      variable majorat, 0 ,22
leader "Type major attribute:"
      leader "Type major att
helpfile help/major.hlp
```

```
)
   PRETAINS majoratet ("Major attributes")
          contateeerch
                          -{
         BEE COLUMN
                       17
         1120
                      0,0, 0,77
         datus
                                   1, 1 -, "ADD_WIMDOW minoret 5 41"
2, 1 -, "CALL demay"
                      majoret,
         datus
                      minoret,
         textline
                      majoretzt,
                                  4, 1
                      serolitzt, 15, 1
         textblock
                      majorat,
                                   8, 1
         texthlosk
         button
                      steemen,
                                  16, 1, - "REMOVE WINDOW
                                  "CALL posrok"
16,45, "CALL quetup",
                      ennosch,
                                         THEN SCHOOLS GDING
        )
  SCHEEN contatecarch (
      title
                  "POINT OF COMPACT ATTRIBUTE SHARCE"
                 dontatsearch, 2,1
majoractions, 19,1
      Window
      window
               THE
     border
            Point of contact display screen
  VARIABLE F HAME (
foundin "VARCHAR f name.arr"
STRING
                       4-100
 DATOM contactnessel (
    SEE FORS
    awa columns
                      25
                      P MARE, 0, 15 "Contact Home:"
    variable
   leader
pickable
 VARIABLE L HAME {
foundin "VARCHAR l name.arr"
   formet
                      t-15e
)
DATUM contactness {
   AUD TOWN
   Bun columns
                      30
   veriable
                     L_MAME, 0, 1
   pickable
VARIABLE CONTITUE ( -TITLE may be a reserved word
   foundia "VARCHAR contitle.arr"
   type
                    STRING
                     4-450
DATOM contitle (
   PART TORS
                     1
   num columns
                     70
   variable
                     CONFITTIE, 0, 9
   loader
                      "Title:"
  pickable
VARIABLE OFFICE {
  foundin "VARCEAR office.arr"
```

type

STRIBS

```
4-48a
  DATOM office (
     DEED POWE
     Sum columns
                           70
                           CETTON, O, 15
     looder
                           "Office:"
     pickable
                           100
  VARIABLE AGENCY DEPT (
     foundia "VARCHAR agency dept.arr"
type string
 DATOM agency (
     aum columns
                          70
                          AGENCY DEPT, 0, 10 "Agency:"
     variable
     looder
     pickable
 VARIABLE ST ADD_DIV { ~***caly 25 characters for a street address? foundia "VARCHAR st_add_div.arr" type STRING
     type
format
 1
 DASTEM st_add_div {
                          50
                         ST ADD DIV, 0, 17
     variable
    leader
   pickable
                          200
 VARIABLE PO BOY (
    foundin "VARCEAR po box.arr"
    type
                          9779.IB0
                          4-10s
 DATEM po_box {
    REE_rows
                          40
    Variable
                         PO BOX, 0, 18
    leader
                          "Post Office Box:"
   pickable
                         130
VARIABLE MISC ADD {
foundin "VARCHAR misc add.arr"
   type
                         STRING
                         4-10s
DATOM misc_add (
   awa columns
                         20
   variable
                       MIRC ADD, 0,2
   pickable
                         150
VARIABLE CITY BASE {

foundia "VARCHAR city base.err"

type syming
   type
formet
                         4-250
DATOM aity base (
   BUR FORE
                        1
   aum columns
                        30
   veriable
                        CITY BASE, 0, 1
   pickeble
VARIABLE STATE {
   foundim "VARCHAR state.arr"
   type
                    8773.1304
```

```
format
                            4-2a
   }
   DAFON state (
      2006 TOUR
      num columns
  piskoble
                           STATE, 0, 1
                           100
   VARIABLE EIPOODE (
     foundia "VARCHAR Ripcode.orr"
type STRING
      formet
  DATOM Eipoodo {
    aum_rows
    aum_oolume
                          1
      variable
                          EXPOODE, 0, 1
     pickable
  VARIABLE MAIL CODE (
     foundin "VARCHAR mail code.arr"
type STRING
     type
format
                          4-10s
  DATTM mail_code {
     BED TOWN
     Bun columns
veriable
                          40
                         MAIL COOR, 0, 12
     pickable
  VARIABLE PECEE (
     foundin "VARCHAR phone.orr"
type STRING
  )
 DATOM phone (
    ne columns
                          40
     variable
                         PHONE, 0, 20 "Talephone Number:"
     leader
   pickable
 VARIABLE AFFILIATIO (
    foundin "VARCEAR affiliatio.arr"
    type
formet
                       STRING
                         4-80
DATOM affiliatio (
                       1
   ave columns
                        30
    variable
                       Affiliation:
    losder
   pickable
VARIABLE MAJOR ATTRIB (
   foundin "VARCHAR major attrib.arr"
type STRING
format 4-16s
DATEM major_attribute {
   BUR POWE
                1
35
   aun columns
   Variable Major ATTRIE, 0, 19
leader "Major Attribute:"
pickable No
   leader
VARIABLE MINOR ATTRIBUTE (
  foundin "VARCEAR minor attribute.arr"
```

type

STRING

```
format
                              4-45a
   DATOM minor_ottribute (
      BEE TOWN
      num_columns
                              MINOR AFFRIBUTE, 0, 19
      leador
                             "Minor Attribute:
                             200
   VARIABLE AREA (
      foundin "VARCEAR area.arr"
                           STRIBE
  DATOM area {
      BUR TOWN
                             1
      nem columns
                             30
                            AREA, 0, 7
   ~ leader
    pickable
  VARIABLE SCOPE (
     foundin "VARCHAR Scope.arr"
type STRING
                             4-10s
  DAFON scope (
     NEW COLUMNS
                            1
                            SCOPE, 0, 8
"Scope:" ~(whetever that me
  variable
- leader
     pickable
                            190
 MINDOW posstuff {
    num rows 17
    num columns 78
    line 0, 0, 0, 77
    datum contactmenel,
    datum contactmenel,
    datum contactmene2,
                                              1, 2
      datum
datum
                                             1,40
                       contitle,
      datus
                       office,
                                              3, 2
                       ogency,
ot add div,
      date
                      po boz,
miso add,
                                              €, 25
      datus
datus
                       gity base,
                                              7, 2
7,25
                       state,
      datus
                       zipoode,
                                              7,35
                      mail gode,
                                              0, 2
                      phone,
                      affiliatio,
                                             9,41
      datus
                      major attribute,
                                            10, 2
     datus
datus
                      misor attribute,
                                            11, 2
12, 2
                      eres,
                      scope,
                                            12,40
TENTETHE nexteddr ("Show next address")
BUTTON maxtaddr (
    am rous 1
   ata_column 25
   textline nextender, 0, 2
helpfile help/nobelp.hlp
WINDOW getoffsarees (
    aum columns 78
                0, 0, 0, 77
nextaddr, 2, 1, "CALL artpod"
stsearch, 2, 1, "CALL dumy"
cancech, 2, 45, "CALL quetup",
    line
    button
     betton
    button
```

```
"mm screen dhing"
  SCREEN poodisplay (
title "DISPLAY POINT OF CONTACT INFOSMATION"
                           pocetuff, 2,1
getoffscreen, 18,1
        window
                                                2,1
        window
        border
              Ruman affects citation database screen
  VARIABLE titlefrag (
foundia "VARCHAR titlefrag.arr"
type STAING
format 4-60s
     DATEM titlefreg (
        Num_rows 1
num_columns 65
variable titlefrag, 0,0
helpfile help/titlfrag.hlp
 TEXTLINE keywrdist ("Meyword estegories")
 BUTTON keywrd {
     num_columns 25
tertline keywrdtrt, 0, 2
helpfile help/keyword.hlp
 VARIABLE detes? (
    type IFFECER
     DATOM dates (
        Par Lone
        num_columns 15
                        dates2, 0 ,4
                      "and"
        loader
        trailer
                        " (Year) "
        bolpfile
                        help/date.hlp
        3
 DATEM detect {
       num rows 1
num columns 27
        variable
                     dates1, 0 ,14 "Date between:" (year)"
        leeder
        trailer
       trailer "(year)"
helpfile help/date.hlp
VARIABLE authornen (
    foundin "VARCEAR authorses.arr"
   type STRING
format 4-40s
   DATES suthor (
      num rows 1
aum columns 77
variable authornem, 0,20
"Author's last as
                       "Author's last nome:"
       belpfile belp/author.blp
VARIABLE citattemi (
                                                           - Note: The string lengths
   foundin "VARCEAR40 authorlist[0].arr"
                                                           ~ are to get by the perser.
~ The program will figure out
~ whether to allow 30 or 40
   type STRING
format 4-30s
                                                           -columns on the display.
   DATOM citautacal (
      num rous 1
num columns 40
```

```
veriable
                      aitautnemi, 0, 9
        leador
                       "Author:"
        pickable
                        100
  VARIABLE ditestment (
     foundin "VARCHAR40 authorlist[1].arr"
     type STRING
format 4-30s
     DATOM citautaca2 (
        men rows 1
        nun columns 40
        variable citautuma2, 0, 9
pickable 20
 VARIABLE citestacal (
     foundin "VARCHAR40 authorlist[2].arr"
    type STRING
format 4-30s
     DATOM citestams (
       num columns 40
variable attautnum3, 0, 9
pickable 20
 VARIABLE citautaca4 {
    foundia "VARCEAR40 authorlist[3].arr"
    type STRING
format 4-30s
    DATUM citagtami (
       non rows 1
non columns 40
variable citautness, 0, 9
pickable 20
 VARIABLE citautaca5 (
    foundia "VARCHAR40 authorlist[4].arr"
type STRING
formet 4-30s
    DATOM citawtness (
       ama rows 1
       variable citartness, 0, 9
pickable NO
VARIABLE citestrems (
    founds "VARCHAR40 authorlist[5].arr"
type STRIBS
founds 4-20s
    DATES citautness (
      num rows 1
num columns 23
variable citautnams, 0, 0
pickable mo
VARIABLE citautaem7 {
   foundin "VARCHAR40 authoriist[6].arr"
   type STRING
formet 4-20s
   DATOM citautamn7 (
     num rous 1
num columns 23
      variable citestana7, 0, 0
pickable NO
VARIABLE citautness (
   foundin "VARCHAR40 authorlist[7].arr"
   type STRING
format 1-20s
   DATOM citautames (
```

```
htm_columns 23
                    citautame, o, o
         variable
         pickable
  VARIABLE citartness (
     foundin "VARCHAR40 authorlist[0].mr"
     type STRING
format 4-20e
     DATOM citautams (
        num rows 1
num columns 23
        variable citautaen9, 0, 0
 VARIABLE citestmen10 (
    foundin "VARCHAR40 authorlist[9].arr"
    type STRING
format 8-20s
     DATOM citautnessio (
        ama rome 1
ama columns 23
        variable
                      citautnemio, o, o
       pickable
THITLINE entitltmt ("Title:")
 WINDOW heitlearn {
    num rows 16
num columns 76
line 0,
                  0, 0, 0,77
searchtzt, 1, 1
    textline
    datus
                   qualif,
                                 1.45
    detun
                   author,
                                 3, 1, "CALL VCAPITAL Sauthornem",
    textline
                   estititrt, 4, 1
titlefrag, 4, 9, "CRLL VCAPITAL Stitlefrag",
    datus
                                        "HEHVALS"
                                 8, 1
                  datas1, 5, 2
datas2, 8,27
keywrd, 10, 1, "CALL herch010"
stsearch, 15, 1, "CALL herch001"
canasah, 15,45, "CALL qsetup",
"EEW_SCREEM dbing"
    datum
    button
    button
   3
screen haitlearn (
   title "SUMAN EFFECTS CITATION SHANCE"
window hoitlearn, 2,1
                hoitlearn, 2,1
                majoraction3, 18,1
    window
        Declarations for animal effects citation detabase screen
WINDOW acitisorn (
  REEL POWS
                 78
                  0,0, 0,77
                  searchtst, 1, 1
   textline
   datus
                  qualif,
                               1,45
   datum
                  author,
                                3, 1, "CALL VCAPITAL Southornen",
                                       "HENVALG"
                  emtitltrt, 4, 1
titlefreg, 4, 9, "CALL VCAPITAL Stitlefreg",
   textline
   datum
                                       "HENVALO"
  datus
                            8, 1
                  dates1,
  datum
                 datas2, 8,27
keywrd, 10, 1, "CALL asrch010"
stsearch, 15, 1, "CALL asrch001"
caacsch, 15,45, "CALL qsetup",
                  dates2,
                                8,27
  button
  button
  button
                                       "HEN SCHOOL doing"
```

```
screen aciticara (
title "ANT
                  "ANIMAL EFFECTS CITATION SHARCE"
       window
                  acitiscra, 2,1
                  majorestical, 10,1
          Declaration for structural effects ditution database screen
 WINDOW saitlearn
                  16
      accelos and
      1100
                   0,0, 0,77
      textitue
                    searchtzt, 1, 1
      detus
                    qualif,
                               1, 45
       datus
                    author,
                               3, 1, "CALL VCAPITAL Southornes",
                                      "HEEWVALO"
      textiine
                    emtititut, 4, 1
                   titlefreg, 4, 9, "CALL VCAPITAL Stitlefreg",
                                      "MINVALO"
      datum
                    dates1,
                             0, 1
      datum
                    dates2,
                               8,27
                   keywrd, 10, 1, - CALL serobolo"
                                      "CALL dumy"
      button
                   stsearch, 15, 1, "CALL serch001"
                   stsearch, 15, 1, "CALL quetup", "MER SCREET Chinq"
 ACREM soitisorn (
      title
                 "STRUCTURAL EFFECTS CITATION SHARCE" -ar 2/4 Corrected
      window
                 saitisara, 2,1
                 majoractions, 10,1
       window
      border
 - Declaration for moise and scale boom modeling effects citation detabase
 TENTINE actimplement ("NOT INSUMMENTED IN PROTOTTER VERSION OF ASAM")
WHEDOW moitisorn
   PAST LOAD
                16
   awa columns 78
   معنة
                0, 0, 0, 77
secreptist,
    textline
                                1, 1
    datus
                 qualif,
                                1.45
   datus
                 author,
                                3, 1, "CALL VCAPITAL Sauthorness".
   textling
                omtitltxt,
                                4, 1
                titlefrag,
   datus
                                4, 9, "CALL VCAPITAL Stitlefreg",
                                      "BEHVALE"
   datus
                dates1,
                               0, 1
   detun
                 dates2,
                                0.27
   button
                keyurd,
                               10, 1, - CALL mercholo"
                                      "CALL dumny"
                              15, 1, "CALL merch001"
15,45, "CALL quetup",
"MEW SCRIME dbing"
   bettoe
                stseerch,
   button
                cancech,
   )
screen noitisora (
                "BOISE AND SOUTH BOOM MODELING REFERRES SHARCE"
               maitisorn, 2,1
majorastical, 18,1
     window
      window
                TRO
          " Declaration for LEGISLATIVE DATABASE SCREEN
WINDOW legislatecroca (
   BUR TOUG
                 16
```

```
num_columns 78
                       0,0, 0,77
         tertline
                             drint, 1, 1
         detm
                       qualif,
                                    1,30
         dat.m
                       author,
                                           "CALL VCAPITAL Sauthornon".
                                            "HUNVALG"
         tortline
                      emtitltrt, 4, 1
titlefreg, 4, 9, "CALL VCAPITAL Stitlefreg",
         datus
                                            "MINVALS"
        datus
                                  0, 1
                       dates2,
        datus
                                   8,27
        button
                                 10, 1, "NEW SCHEEN Ikeyurdschaureen"
                      keywrd,
                      actimplement, 5,15
stsearch, 15,1, "CALL demy"
cancech, 15,45, "CALL quetup",
"May Schum dbing"
         textline
         button
         button
        )
  SCHEME legislatsureen (
        title
                    "LEGISLATIVE CITATION DATABASE SEARCE"
        Website
                   legislatsurous, 2,1
majoraution3, 10,1
        window
       border
                   TRE
         Declaration for Animal effects keyword category search screen
  VARIABLE study2 {
     type srangs
formet 4-20s
     DATOM study2 (
        aum rose 1
aum columns 37
        variable
                       study2, 0 ,14
        leader
                      "Study type 2:"
        belpfile
                       help/study2.hlp
    DATOM studyžd (
       RUM POWS
       num columns 37
variable str
                       study2, 0 ,14
                    study2, 0 ,14 "Study type 2:"
       leeder
       pickable
                      250
VARIABLE study1 {
    type STRING
formet 4-20s
    DATOM studyl (
      Bus Lone
       awa_oolwans 37
       variable study1, 0 ,14
       leader
                      "Study type 1:"
       holpfile
                   help/study1.hlp
   )
DATOM studyld {
      BES TOWS
      Num_columns 37
                   study1, 0 ,14 "Study type 1:"
      londer
                  290
      pickable
VARIABLE empdose {
   foundin "VARCHAR empdose arr"
   type STRING
format 4-20s
  DATEM expdess (
    BEE TORRE
      aum columns
                   40
                   expdess, 0 ,19 "Experimental type:"
      veriable
      leader
     helpfile
                    help/methodel.hlp
  DATOM expdesed (
```

```
BUR POWS
            awa_oolwas
                                   40
                                  expdess, 0 ,19
"Experimental type:"
            variable
           Leader
           pidable
                                120
 VARIABLE moistype (
foundin "VARCEAR moistype.arr"
       type STRING
format 4-20s
       DARUM moistype (
           AND rows 1
BUD columns 37
           variable acistype, 0 ,12
leader "Boise type:"
                               help/asetype.hlp
           belpfile
      DATES noistyped {
         AUM ROLLING

RUM FORD

RUM COLUMNS

37

Variable ROLStype, 0 ,12

leader "Hoise type:"

"Akable NO
 VARIABLE species4 {
   foundia "VARCHARAO species4.arr"
   type STRING
   foundt 4-40s
      DATUM species4 {
    num_rows
    num_columns
                               65
          variable species4, 0 ,16
leader "Species type 4:"
helpfile help/species.hlp
     DATUM species4d (
          num columns
                                 1
                             65
          variable species 4, 0 ,16 leader "Species type 4:"
VARIABLE species3 (
foundin "VARCHAR40 species3.arr"
type STRIES
format 4-40s
     DATEM species (
       aum rows 1
         variable species 3, 0,16
leader "Species type 3:"
helpfile help/species.hlp
    )
DATUM species3d {
        REEL COLUMNS
                              65
        Variable species, 0,16
leader "Species type 3:"
pickable 20
VARIABLE species2 (
foundin "VARCHARAO species2.arr"
    type STRING
format 4-40s
    DATOM species? {
      BEEN SPECIAL 1
BUE FOWE 1
BUE FOWE 5
VARIABLE SPECIAL 2, 0,16
Leader Special type 2:*
helpfile help/species.hlp
   )
DATOM speciestd (
        ama columns 65
```

```
species2, 0 ,16 "Species type 2:"
VARIABLE species1 {
   foundia "VARCHAR40 species1.arr"
   type STRING
   foundt 4-40s
     DATEM species 1 (
        num columns 65
variable spec
                       species1, 0 ,16
"Species type 1:"
help/species.hlp
         loader
         belpfile
     Distribute species id (
        PER LONE
         nes columns
                          65
        variable species1, 0,16
leader "Species type 1:"
pickable 20
THETELOCK animal (
     num rows 6
num columns 35
filename tri
border TH
                           tstblk/animal.tst
                           YES
TEXTBLOCK ver animal (
      aum rowe 8
aum columns 45
fileness txtblk/varaninl.txt
                           YES
WINDOW speciatry {
aum ross 1
aum columns 50
                   species2, 0, 1, "CALL VCAPITAL aspecies2",
                                               "HEWVALS",
                                              "CALL queryal2"
WINDOW speciatry (
   aum columns 50 datum spe
                     species3, 0, 1, "CALL VCAPITAL Especies3",
                                              "MEWVALS",
                                              "CALL quoryell"
WINDOW speciatry {
num_rows 1
num_columns 50
                   species4, 0, 1, "CALL VCAPITAL Especies4",
                                              "HEWVALG",
                                              "CALL queryal4"
           akeywrdsearch (
   BEET LOAD
                   78
                    0,0, 0,77
   1100
                    qualif, 1, 1
mainels, 1,40
species1, 2, 1, "CALL VCAPITAL Sepecies1",
   datus
datus
                                             "MENVALS",
"CALL queryall"
                    species2d, 3, 1
species3d, 4, 1
   detra
   detun
   detun
                    speciesid, 5, 1
noistype, 6, 1
expdesed, 6,38
```

variable

```
stady1d,
                               7, 1
     datus
                   study2d, 7,38
                   onimal,
                               8,23
     toztlino
                   serolitzt, 16,23
                   stsearch, 10, 1, "CRLL asrch002" cancech, 10,88, "CRLL quetup",
                                      "MEN SCREEM Ghing"
    helpfile help/sobelp.hlp
 SCHEM akeyerch {
      border
 WENDOW akeyalt

Bun rows 19

Bun columns 70

line 0,0,
       }
                        ( - siteraste used for pop-up textblock
                  0,0, 0,77
                  qualit,
    datum
                               1, 1
    datus
                  animals,
                               1,40
    detun
                  speciesld, 2, 1
                  species2d,
                              3, 1
     datus
                  species3d, 4, 1
species4d, 5, 1
     dat un
                  moistype,
                               6, 1, "CALL VCAPITAL Smoistype",
                                      "BEWVALS",
                                      "CALL dumy"
    datus
                             6,30, "CALL VCAPITAL Sempdose",
                  expécsa,
                                      "HENVALE",
                                      "CALL dumy"
    detun
                              7, 1, "CALL downy"
7,38, "CALL downy"
                  studyl,
    datum
                  study2,
                 var animal, 8,18
sorolltxt, 16,23
stsearch, 18, 1, "CALL asrch002"
coacsch, 18,55, "CALL quetup",
"NEW SCREEN dbing"
    textblook
    textline
    button
    button
    helpfile help/mohelp.hlp
 SCHOOL SPANIS ALLEGE MALAGED SEARCH.
                 akeyalt, 2,1
         Declaration for Euman affects keyword ostogory search screen
amarons 10
     aum rous
aum columns
filename
                     txtblk/methodol.txt
HIMDOW emprtype {
     num rows
                    10
                   35
     textblock
                    exprtype,
                                 0,0
                                                 ð.,
TEXTRLOCK moistype (
    aum rows
aum columns
filename
                    35
                     tatblk/asetype.tat
     border
WINDOW moistype {
    num rows 10
                    noistype,
                                 0.0
TEXTELOCK hofdess (
    BUR FOWS
                   10
                  35
     aum columns
     filenmo
                    tetblk/hunimp.txt
```

```
VARIABLE descripe {
formed "VARCHAR descripe.arr"
type #FRIEN
formet 4-45s
    DATOM desetype (
       num columns
variable
                        77
                        desctype, 0 ,24 "Effect descriptor type:"
        leader
       bolpfile
                        help/hunimp.hlp
    DATOM structoff (
       FEE COLUMN
                        desctype, 0 ,22 *Structural effect ca:*
       variable
       belpfile
                        bolp/strimpec.hlp
WINDOW
          hkeywrdsearch (
                  19
              0, 0, 0,77
    1120
                  qualif,
descripe,
    datum
                              1,30
                               2, 1, "CALL VCAPITAL &desctype",
                                       "CALL hereholl"
    taxtblock
                  hofdess,
                               6,23
                             3, 1, "CALL VCAPITAL Smoistype",
    deten
                  solstype,
                                       "CALL herchol2"
                               4, 1, "CALL VCAPITAL Sampless",
                  expdess,
                                       "BIEWVALE",
                 scrollist, 16,23
stsearch, 16, 1, "CALL berch002"
concech, 18,45, "CALL questup",
"EMF SCREEN ching"
   textline
   button
   betton
     ì
ecuting predator (
                  hkeywrdsearch, 2,1
majoractical, 18,1
      wohatw
      window
     border
                  TRE
      declaration for Structural effects keyword category search screen
TEXTALOGE safdado (
    nim rows
num columns
filename
                     35
                      txtblk/strimpec.txt
     border
                      THE
WOODELLE
                 10
                 70
                 0, 0, 0,77
qualif,
   line
   datum
                                1,30
                                1, 1, "CALL VCAPITAL &desctype",
                 structoff,
                                       "BHWVALS",
                                       "ADD_WINDOW Boistype 7 24"
   taxtblock
                 sefdess,
                                5,23
   datus
                 noistype,
                                2, 1, "REMOVE_WINDOW",
                                       "CALL VCAPITAL Spoistype",
                                       "MEHVALS",
                                       "ADD WINDOW exprtype 7 24",
```

```
"CALL dumy"
                empdese, 3, 1, "CALL VURPITAL Sempdese",
   textline
                serolltst, 15,23
                stsearch, 17, 1, "CALL dumy"
   button
                canosch,
                            17,45, "CALL quetup",
                                   "HER SCHEEN Ching"
SCHOOL SPANSON STRUCTORAL RELEGIES MELHORD SEARCH.
     window
                skeywrdsearch, 2,1
      window
                majorantica3, 10,1
     border
                THE
- Declaration for Moise & Scale-boom effects keyword category search screen
TENERLOCK shdees {
                  10
35
     BEEL FORM
     num columns
filename
                    tstblk/sbispec.tst
                 THE
     border
  VARIABLE moisoff {
    type
format
                t-45a
  DATOM moiseff {
        BEE POWE
        awn columns
                       77
        variable
                       moiseff, 0 ,32
                       "Moise and sonic boom effect on:"
        leader
       helpfile help/nohelp.hip
WINDOW shkeywrdsearch (
     PART LOAD
                  18
    am columns
                 0,0, 0,77
      datus
                  poiseff,
                                      "CALL dumy"
                               1,1,
                   qualit,
                                1,30 - nr 2/5 Added
      taxtblook
                   sbdead,
                                 5,23
                               2,1, "CALL dummy"
3,1, "CALL dummy"
      detwa
                   moistype,
      datum
                   ampdossa,
                 notimplement,
     testline
                                         5,20
                 scrolitxt, 15,23
stsearch, 17,1, "CALL dwary"
cancsch, 17,45, "CALL questup",
      tortline
      button
                                      .Mak scanns oprad.
    }
screen nkeysrch (
    title
               "MOISE AND SOSIC-BOOM REFECTS RETROSO SEARCE"
     window
                sbkeywrdsearch, 2,1
     Window
              majoraction3, 18,1
    border
               YES
- Declaration for LEGISLATIVE effects keyword category search screen
-WINDOW lkeywrdsearch
     BER POUR
                   10
     BWE COLUMNS
                 70
     line
                  0,0, 0,77
                               1,1, "CALL dummy"
1,30 ~ nr 2/5 Added
2,1, "CALL dummy"
2,1, "CALL dummy"
     datus
                  moiseff,
     datum
                  qualif,
     datus
                  noistype,
                  expdese,
     detua
     textblock
                               5,23
     textline
                  andy,
                                  5,20
     textline
                  scrolltst, 15,23
```

```
steearch, 17,1 camesch, 17,45, "CALL quetup",
           button
                                                    "MEN SCREEN Ching"
    -SCREEN lkeywrdschecroen {
- title "LEGISLATIVE EFFECTS SHARCE BY RETRORO"
                        lkeyurdsearch, 2,1
           window
                        majoraction3, 18,1
                CITATION DISPLAY SCHOOL
   TEXTLINE shurevioutit ("SHOW REVIEW")
   BOTTOM shureview {
         aum rows 1
num columns 15
         taxtline shwreviewirt, 0,2
helpfile help/citation.hlp
   TEXTLINE Chinquirtat ("DATABASE INQUIRY SCHOOL")
   BOTTON Chinquir (
        ham rows 1
aum_columns 25
textline dbinquirtxt, 0, 2
helpfile help/citation.hlp
  THETLES altseltzt ("Alternative selections you can now make:")
  TEXTLINE rescopetit ("RESCOPE SHARCE")
  BUTTON TOSCOPE (
       The cope (

AND_rows 1

AND_columns 27

textline rescopetrt, 0, 2

helpfile help/rescope.hlp
  TENTELOCK slpistf (
       fileseme blrplt/slpintf.bpl
sum_rows 16
aum_columns 76
border YES
 WINDOW shunxtoit {
    num_rows 17
    num_columns 78
         textblock sipints, 1,1
 TEXTLINE shwartcitzt ("Show next citation")
 SOFFON shwarteit (
    num_rows 1
   aum rous
aum columns 22
textline shwartcitrt, 0, 2
helpfile help/schelp.hlp
TEXTLINE shworitrvist ("Show critical review (if any)")
BUTTOM shwaritry (
    num columns 35
     textline shwcritrvtxt, 0, 2
helpfile help/nobelp.hlp
TEXTLES shouldtst ("Show abstract (if any)")
BOTTOM shumbet {
```

```
num columns 24
         textline
                        shumbetat, 0, 2
         helpfile help/nobelp.hlp
   THEFLER prathisaitst ("Print this citation")
   BUTTON prathisoit (
         num columns 24
        textline prathiscitzt,
helpfile help/schelp.hip
                         prathisaitzt, 0, 2
  TENTILISE practitat ("PRIST ALL CITATIONS")
  SUFFOR pracit (
      num rows 1
num columns 27
        textline practixt, 0, 2 helpfile help/schelp.hip
  WINDOW attdispection (
      BEE POUR
                     78
      AMES COLUMNS
      button
                   shwartait, 0, 1, "CALL shwartait"
shwabet, 0,40, "CALL deplahet"
shwaritry, 1, 1, "CALL deplarit"
prathisait, 1,40, "CALL dummy"
     button
     button
button
  VARIABLE shwdescl (
     foundin "VARCHAR60 entdesc[0].arr"
     type STRING
format 4-60s
     DATOM shwdosul {
       nen rows 1
        variable shudesdl, 0 ,1
pickable 20
 VARIABLE shudosa2 {
    foundin "VARCHARSO entdesc[1].arr"
    type STRING
formet 4-60s
    DATEM shudosc2 {
       num columns 65
       variable shudesc2, 0 ,1
pickable 20
VARIABLE shwdesdl (
    foundin "VARCEAR60 ontdesc[2].arr"
    type STRING
formet 4-60s
    DATOM shudosul {
       aum_columns 65
vuriable shwdeed3, 0 ,1
pickable 20
VARIABLE shudosc4 {
    foundin "VARCHARGO entdesc[3].arr"
   type STRING
formet 4-60s
   DATUM shwdesc4 (
aum_rows 1
aum_columns 65
```

```
variable
                           shudosa4, 0 ,1
            pickable
      VARIABLE suitable (
         foundin "VARCEAR suitable.arr"
        type STRING
format $1s
        DATEM suitable (
           AME POWS 1
           variable suitable, 0, 21
leader "Suitability rating:"
pickable EO
     VARIABLE entryses (
        foundia "VARCHAR coumb.arr"
        type STRING
format 4-6s
       DATEM entrysum (
          BED FORM 1
           num columns 30
          variable entrynum, 0, 23
leader "AEAH Citation number:"
          pickable
}
                        150
   TEXTLEM shutitri ("Title:")
   HIRDON citcisplay (
      htm columns
datum
                     78
                     cetrynus,
      datum
                     suitable,
                                    0,32
      dates
                     when,
                                    0,60
      datus
                     ditautami, 2, 1
      datus
                     ditautama2, 3, 1
      detw
                     altestmen3, 4, 1
                     citantness, 5, 1
      detus
                     citautness, 6, 1
     datus
                     citautness,
                                   2,42
     datum
                     ditautness7, 3,42
     datum
                     citautness, 4,42
     datum
                     citautness, 5,42
     detun
                    citautaca10, 6,42
     textline
                                 8, 2
                    shwtitzt,
     detu
                    shwdesci,
    datum
datum
                                  9, 9
                    shwdese3,
                                  10, 9
     detun
                    shudeso4,
                                 11, 9
     button
                                 14, 1, "ADD WINDOW shwartest 4 1" **** 777777 16, 1, "CALL downy" 16,28, "CALL meliste",
                     shummtoit,
    button
                    pracit,
                    rescope,
    button
                                 "CALL research"
16,60, "CALL meliste",
   button
                   concech,
                                         "CALL quetup",
VARIABLE selemit {
  type STRIBS
  format 4-15s
DATEM selerit {
  num rows 1
   variable selection 0 , 22
leader "Selection Criterion: "
              220
  piakabla
```

```
WINDOW citdispheed (
      BER POW
      datus
datus
                  selarit, 0, 1
currait, 1, 1
numofait, 1,32
2, 0, 2, 77
       datum
  screen aitdepl (
     title "DETAILED DISPLAY OF RETRIEVED CHTATICES"
window ditdispheed, 2,1
window ditdisplay, 5,1
border TES
              ABSTRACT/CRITICAL REVIEW DISPLAY SCHOOL
  THE Bulltont ("
  WINDOW shuntabe (
     num rows 1
num columns 15
textline nul
                     mulltaxt, 0,2
 THEFTE Shworitry ("Show another review (if any)")
 BOTTOM shwatter (
      BUR FOWS
       hun_rows 1
       tartline shwuritry, 0, 2
helpfile help/nohelp.hlp
 Window shwartrey (
200 rows 1
200 columns 31
                   shuntrey, 0, 1, "RESOVE STEDON",
                                             "CALL deplarit"
 PRINTLINE abedone ("Done viewing this text")
 abedone (
      num rows 1
num columns 29
textline abs
      tertline absdome, 0, 2
helpfile help/mohelp.hlp
TEXTSLOCK memotext (
   num_ross 12
num_columns 74
fileneme txtblk/memotxt.txt
WINDOW abedisplay (
   ava rows 17
               shwtitzt,
                                  1, 2
1, 9
3, 2
    datus
                   shwiesal,
   textblock
                   memotext,
                                    16,40, "REMOVE WINDOW",
"MEN SCREEN citdspl",
                    abedone,
   button
                                               "ADD WINDOW citdispaction 19 1"
   }
schowabe (
  title "DISPLAY ABSTRACTS AND CRITICAL REVIEWS" window ditdispheed, 2,1 window absdisplay, 5,1 border YES
```

-END OF ASARCIT. SOF

A.2 Screen Description File for MTR-related Operations

```
-INCLODE STATEMENT FOR THE ASAN typedef DEFINITIONS NUMBER TO
           COMPLET UNUSS.C WITHOUT INCURRING THE REATH OF THE COMPLER
  DECLEDE AGAINTYDE S
  INCLODE ASAN. R
  - DECLARATIONS IN MOST-LEXICAL OBJECT SEQUENCE .....
  - Multiple Choice Space
  VARIABLE BELGStoo (
     foundin "VARCHARIO deplement [0] .arr"
     type STRING
format 4-30s
 DATOM maldatoo (
     aum rous 1
     num columns 32
     variable maldat00, 0, 2
pickable . E0
 VARIABLE muldat01 (
     foundin "VARCEARIO depletit[1].arr"
     type STRING
format 4-30s
 DATOM muldat01 {
    num_columns 32
    variable meldet01, 0, 2
pickable 20
 VARIABLE suldat02 {
    foundin "VARCEARIO depimult[2].arr"
    type STRING
format 4-30s
DATEM muldet02 (
   num columns 32
    variable muldat02, 0, 2
pickable MO
VARIABLE maldetos (
   foundin "VARCERRIO depimult[3].arr"
type STRING
format 4-30s
DATOM muldatos {
   Aum_rows 1
aum_columns 32
variable muldat03, 0, 2
pickable mo
VARIABLE muldat04 {
foundin "VARCHAR30 deplemit[4].arr"
type string
foundt 4-30s
DATOM muldat04 (
   aum columns 32
```

```
variable muldet04, 0, 2
pickable MO
  VARIABLE Buldatos (
     foundia "VARCHARIO deplumit[5].arr"
type STRING
foundt 4-30e
 DATOM muldat05 {
     num columns 32
variable muldat05, 0, 2
pickable NO
 VARIABLE muldetos {
     foundin "VARCEARIO deplement[6].arr"
     type STRING
format 4-30s
 DATEM muldatos (
    aum rows 1
aum columns 32
variable muldat06, 0, 2
pickable 20
 VARIABLE muldet07 {
    foundin "VARCHARIO deplusit[7].arr"
type STRING
formet 4-30s
 DAFOM muldet07 (
   aus_rows 1
    num columns 32
    variable muldat07, 0, 2
pickable mo
 VARIABLE muldatos {
foundin "VARCEARSO deplault[8].arr"
    type smins
formet 4-30s
DATOM maldatos (
    num rows 1
num columns 32
    variable muldat00, 0, 2
pickeble 20
VARIABLE muldatos (
    foundin "VARCHARIO deplanit[9].arr"
    type string
format 4-30s
    )
DATOM muldatos (
   Aum rows 1
hum columns 32
   variable maldatos, 0, 2
pickable 20
VARIABLE muldet10 {
   foundin "VARCHARSO deplanit [10] .nrr"
   type string
format 4-30s
DATES muldet10 (
   num rows 1
   num columns 32
variable muldatio, 0, 2
pickable 20
```

```
VARIABLE maldet11 {
       foundin "VARCHAR30 deplault[11].err"
       type smiss
format 4-30s
   DATOM maldet11 {
      num rows 1
num columns 32
variable muldet11, 0, 2
pickable 80
   VARIABLE meldat12 (
       foundin "VARCEAR30 deplement [12] .arr"
       type swams
format 0-30s
  DATOM muldat12 {
      num_roud 1
       num columns 32
      variable muldat12, 0, 2
pickable NO
  VARIABLE muldet13 {
      foundin "VARCHAR30 deplanit [13] .arr"
      type STRING
format 4-30s
  DAFOM muldet13
                             ₹
      aum rows 1
     awa columns 32
variable muldat13, 0, 2
pickable mo
  VARIABLE muldet14 {
   foundin "VARCEARSO deplomit[14].arr"
     type STRIES
format 4-30s
DATOM muldati4 (
num_rows 1
num_columns 32
vuriable muldati4, 0, 2
pidkable 20
 VARIABLE muldet15 {
    foundin "VARCHARSO depimult[15].arr"
type string
format 4-30s
     3
DAFOM muldat15 (
    Num rows 1
Num rolumns 32
variable muldat15, 0, 2
pickable 30
VARIABLE nuldat16 {
foundin "VARCHAR30 deplault[16].arr"
type stalks
formet 4-30s
DATOM muldet16 {
   num ross 1
num columns 32
variable muldat16, 0, 2
pickable 80
VARIABLE muldati7 {
  foundin "VARCHAR30 deplault[17].arr"
type STRING
format 4-30s
```

```
DAFOM maldet17 {
      Bus rous 1
       awa columns 32
      variable muldet17, 0, 2
pickable 20
   VARIABLE muldatis (
      foundin "VARCHARIO depimult[10].err"
type string
formet 4-30s
  DAFOM mmldat10 (
200 rose 1
200 columns 32
      variable muldatis, 0, 2 7
  VARIABLE meldet19 (
      foundin "VARCHARSO deplumit[19].mrr"
type string
foundt %-30s
  DATUM maldatis (
     hum rows 1
     aum columns 32
     variable muldet19, 0, 2
pickable 20
  - Planner sttributes
  VARIABLE plantame (
    foundia "VARCEAR planmen.arr"
type STRING
formet 4-30s
 DATOM plearnes (
    Num_rows 1
num_columns 50
variable planram, 0, 20
lasder "Your name, please:"
helpfile help/username.hlp
 ,
VARIABLE password {
    type string
    formet 4-10s
DATOM password (
    aum rows 1
    variable password, 0 , 23
leader "Please enter password:"
    londor
    belofile help/password.hlp
- Other General Storage for Varification, Tests, Btc.
VARIABLE monutrum (
'foundin "VARCHAR n2bv.arr"
type STRING
      type
format
                        STRING
                        4-30s
- Boise Source Attributes
VARIABLE szcid (
   foundin "VARCHAR sreid.arr"
   type STRING
format 4-9s
```

```
DATOM strace (
        BEEL PORM
        ava columns 60
        variable sraid, 0, 21
leader "Enne of current here:"
        leader
        pickoblo
                          100
    VARIABLE srodess (
       foundin "VARCHAR STOCKES.ATT"
type STRING
format 4-54s
   DATOM erode (
          stage ;
aum_rows 1
aum_columns 76
variable sredess, 0, 22
"Description:
"Astrosc.bl
                         help/strdesc.hlp
   DAFOM strdese (
         MUN TOWN
                          70
           am columns
                        srodasa, 0, 7
           variable
           leader
          pickable
  VARIABLE datepubl (
foundin "VARCHAR scopdate.arr"
type stains
format 4-12s
  VARIABLE schedule (
foundin "VARCEAR sroeched.arr"
type STRING
foundt 4-50s
 DATEM schedule (
         atta columns 73
         variable schedule, 0, 22
leader "Scheduling activity: "
helpfile help/schdmtr.hlp
 VARIABLE sroorig {
formatin "VARCHAR sroorig.arr"
type string
format 4-50s
DATOM origatr {
    nun rows 1
    num columns 73
     veriable
                     ercorig, 0, 22
                  "Originating motivity:"
help/origatr.hlp
    helpfile
- MR Attributes
VARIABLE GENERATES (
                                                           - CUMPERT Set
   foundin "VARCHAR curartec.arr"
type STRING
format 43s
DATOM GENERATEGE (
       PER TORR
       aum columns
                       27
                         Gurartos, 0,16
       loader
       belpfile
                       belp/curartec.hlp
```

VARIABLE ourwidright (

```
type INTEGER
formet 12d
  DATOM onewidelight (
   num rous 1
num columns 25
           variable curvidright, 0,16
leader "Width (right): "
           helpfile help/curvidrt.hlp
  VARIABLE Gurvidleft (
type INTEGER
formet #2d
 DATUM curvidleft (
2022 rows 1
2022 columns 25
          Variable gurwidleft, 0,16
leader Width (left): "
helpfile help/gurwidlf.hlp
 VARIABLE ourhighalt {
foundia "ALTEFEC ourhighalt.spec"
type string
format 49s
 DATOM ourhighelt (
          num_rows 1
num_columns 27
variable curhighelt, 0,16
leader "High eltitude: "
helpfile help/curhialt.hlp
 VARIABLE ourlowelt (
        foundin "ALTEREC curlowelt.spec"
type STRING
formet +9s
VARIABLE proestos (
                                                                   - PREVIOUS Set
     foundin "VARCHAR preented.arr"
type STRING
formet tis
     DATOM preented (
      num rows 1
num columns 2
variable prearted, 0,4
pickable 80
VARIABLE previdright (
type DFFECER
formet $2d
 DATOM prowidinght (
      num_rows 1
num_rows 1
num_roulumns 0
variable previdinght, 0,4
pickable 20
VARIABLE providleft (
   type integral
DATOM providleft (
      sum_rows 1
num_columns 0
variable providleft, 0,4
pickable 80
```

```
VARIABLE prehighelt {
   foundin "ALTEFEC prehighelt.spec"
      type STRING
formet 49s
  DATOM prohighalt (
         nun rows 1
nun columns 10
         BER POWS
         variable prohighelt, 0,1
 VARIABLE prelowalt (
foundin "ALTEPEC prelowalt.spec"
type STRIBG
foundt 49s
  - Coordinates
 VARIABLE catlet {
    foundia "COORDINATE cat.let"
    type STRING
                                                          - CURRENT OF MITTER Set
        type STRING
formet 9-13s
 }
 VARIABLE entloog {
   foundin "COORDINATE ent.lon"
   type STRING
   foundt . %-lls
 VARIABLE shwiat {
foundin "COCKDIBATE show.lat"
type STRING
                                                        - PREVIOUS or SECT Set.
       type
format
                      4-13s
 VARIABLE shwlong {
foundin "COORDINATE show.lon"
type STRING
       type STRING
 - Mavigation Point Properties
 VARIABLE GREELETYP (
                                                       - CURRENT or MITTER Set
       foundin "VARCEAR ourfirtyp.arr"
      type STRING
format $12s
}
VARIABLE curfirdist {
     type Direct and ,
VARIABLE curfixred (
type INTRODER
formet $34
VARIABLE curfixed (
     foundia "VARCHAR curfixed.arr"
type STRING
format 45e
}
VARIABLE GRIDAVPt {
foundin "VARCEAR GRIBAVPt.arr"
     type STRIEG
formet 43s
VARIABLE profistyp (
                                                       - PREVIOUS or DISPLAY Set.
     foundin "VARCHAR prefirtyp.arr"
type BTRIEG
format $12s
```

```
VARIABLE profindist (
         type Directs
format 43d
     type
 VARIABLE profitred (
   type Direction format 43d
 VARIABLE prefixed (
foundin "VARCHAR prefixed.err"
type states
foundt 45s
 }
 VARIABLE pressvpt (
foundin "VARCHAR pressvpt.nrr"
type STRING
formet 43s
 - Aircraft Parameters
 VARIABLE across (
     foundin "VARCHAR as name.arr"
type STRING
format %-12s
 DATOM accesse {
         num_columns 25
variable acmans, 0, 10
leader "Aircraft:"
pinkable 20
 VARIABLE across {
     foundin "VARCHAR tid.arr"
type STRING
format 4-12s
 DATEM commot (
        num rows 1
         aum_columns 35
variable aumeme1, 0, 16
leader "Aircraft asse:"
help/site help/straircr.hlp
- Operations Specification
VARIABLE day {
foundin "OFFRATIONS ope [0].day"
type INTEGER
format $4d
                                                                - GENERIC OF JAMUARY
VARIABLE jandey {
foundin "OFFRATIONS ope[0].day"
type INTEGER
format 44d
VARIABLE might (
foundin "OFERATIONS ope[0].mite"
type INTEGER
format 94d
VARIABLE jannite {
foundin "SPERATIONS ope[0].nite"
type INTROCK
foundt 94d
VARIABLE febday {
foundin "OPERATIONS ops[1].day"
```

```
type INTERES
  VARIABLE febaite (
foundin "CHRARTONS ope [1].nite"
type name:
foundt 44d
  VARIABLE marday (
foundle "CFERATIONS ope [2].day"
type INTEGER
format 44d
  VARIABLE mornite (
         foundin "OPERATIONS ope[2].nite"
type INTEGER
format $4d
 VARIABLE sprday {
foundle "OFFRATIONS ope[3].day"
type INTEGER
foundt 44d
 VARIABLE apraite {
    foundin "OFERATIONS ope[3].nite"
    type INTEGER
    format . 44d
 VARIABLE mayday (
foundin "OPERATIONS ope [4].day"
type INTEGER
foundt 44d
  VARIABLE maymite (
         foundin "OPERATIONS ope [4].nite"
type DEFEACE
formet %4d
VARIABLE junday (
foundin "OPERATIONS ops[5].day"
type INTROME
formet $44
 VARIABLE juanite {
foundin "OFERATIONS ops[5].nite"
type INTRACE
formst $4d
VARIABLE julday (
foundin "OFFRATIONS ope [6].day"
type INTEGER
formet 46d
                             *4d
VARIABLE julaite {
foundin "OPERATIONS ops[6].mite"
type INTEGER
formet $4d
VARIABLE sugday {
foundin "OPERATIONS ope[7].day"
type INTEGER
format 44d
}
VARIABLE augnite (
      foundin "OPERATIONS ope [7] .nite"
type INTEGER
formet #4d
}
```

```
VARIABLE septoy (
foundin "OPERATIONS ope [0].day"
type INTEGER
  VARIABLE sepaite {
foundin "OFERFICER ope[8].nite"
type INTEGER
format 44d
 VARIABLE octory (
foundin "OPERATIONS ope[5].day"
        type DFFSGER format 144
 VARIABLE octaite {
foundin "OPERATIONS ope[9].nite"
type INTEGER.
foundt 94d
 )
 VARIABLE novday (
foundin "DFERRITIONS ope [10].day"
type INTEGER
format 94d
 VARIABLE novaite {
foundin "OPERATIONS ope [10].nite"
type INTEGER
formet 44d
 VARIABLE decday (
foundia "OPERATIONS ops[11].day"
type INTEGER
format #44
 )
VARIABLE docaits {
   foundin "OFERATIONS ope[11].nite"
   type INTRACE
   foundt $44
 - Missions
 VARIABLE misneme {
foundin "VARCHAR misslabl.orr"
     type string
format 4-7s
 DATOM missamel {
         BEEL FOUR
         awa_oolwans 34
         variable misses, 0, 26
         leader
                        "Bone of Current mission: "
         pickable
VARIABLE normissans (
foundin "VARCEAR cid.art"
        type
format
                         STRING
                          4-70
DATOM missone (
        DEED TORRE
         num columns 24
         veriable
                        nounismens, 0, 14
                        "Mission name:"
help/missname.hlp
        Londor
        helpfile
TRITLINE select (
"Right now you can type ? for help, <CTRL> C to quit, or nowe the cursor")
TENTILINE cavess {"COMPUTE AN ENVIRONMENTAL ASSESSMENT" }
```

```
THATLING Introtat ("VIEW GENERAL INFORMATION ABOUT THIS PROGRAM")
     TENTLINE selecularitit ("Select alreaft and mission for MTR")
TENTLINE objectivit ("Select another MTR")
     TEXTLEME next nevotat ("Enter next nevigation point")
     THEFLUE ourpretst
      { "CURREST
                                        PREVIOUS
                                                                                                           CURRENT FREVIOUS")
     TEXTLESS ourprotest3
    TEXTLINE canceletrist ("Cancel this MTR data entry")
     TEXTLINE savestrirt ("Save this MIR")
    TEXTLINE showsorestrint ("Show more MTR names (if any)")
    THEFLIE recalistrict ("Recall one of the following MFRE:")
THEFLIES definemental ("Enter route Maypoints")
    THATLINE actat ("Aircraft:")
    THETLINE opsessorist ("Operations are sessonal")
    TEXTLIES opthrayrtat ("Operations are even throughout year")
    TEXTLINE instrict ("Please enter day and night operations by month")
TEXTLINE daysite (" DAY BIGST DAY BIG
   TRITLINE instrict

{" DAY BIGST DAY BIGST DAY BIGST DAY BIGST"}

TRITLINE instrict

{"Please exter daytime and might operations per month"}

TRITLINE estmisditht ("Mendon this mission")

TRITLINE estmisditht ("Inter this mission into database")
    TENTLINE stnownistrt ("Start now mission")
    TEXTRLOCK introtet (
             num columns 76
             border THE
fileneme triblk/intro.tri
   BUTTON assessment
          BUR FOW
          awa columns 36
         testline envass, 0, 2
helpfile help/assess.hlp
   SUTTON chapter (
          BEE TOUR
         awa columns 35
         textline
                                          chgatrirt, 0, 2
help/selutr.hlp
         belpfile
  BOTTOM housekeeping (
        aum rous 1
        textline housekp, 0, 2
helpfile help/housekp.hlp
 BOTTOM introtat (
        awa_rows 1
         num columns 56
        textline introtxt, 0, 2
helpfile help/introhel.hlp
 BUTTON modemmetr (
       num rows 1
        num columns 35
       textline modeumstrint, 0
helpfile help/mohelp.hlp
                - so help here our this button doesn't do maything
WINDOW password (
         num columns 60
         MER TOWN
         detum password, 0, 5
TEXTLINE tititat
("Developed for Hoise and Sonic Boom Impact Technology Frogram")
```

THATLISH househp ("PERFORM DATABASE HOUSEKEEPING")

```
PERFLIRE tit2trt ("under U.S. Air Force Contract F33615-86-C-0830")
   TENTLINE tit3trt ("by BEN Laboratories, Inc.")
   Territor titétat ("February, 1986")
   PERFLIME titStat
   ("Darelessed demonstration of Prototype Version...Hot for General Dice")
   TEXTLEM diafo ("Done viewing general information on AGAS")
   BUTTON diafo (
      am rows 1
       tertline dinfo, 0, 2
  WINDOW introduction (
      aum columns 78
      taxtblock introtxt, 0, 1
betton diafo, 14, 1, "MEMOVE WISDON"
  WINDOW introwindow1 {
      ME TOWN
      Bus columns 78
      line
title
                    1, 0, 1, 77
                     "ASSESSMENT STOTEM FOR AIRCRAFT HOUSE (ASSE) "
                    tititat, 2, 9
tititat, 3, 16
      textline
      tartline
                    titStst, 4, 27
tit4tst, 5, 32
tit5tst, 7, 6
      tertline
      taxtline
      textline
      1120
                    8,0, 8,77
      detra
                    ploarmon, 12, 1,
"CALL VCAPITAL Splanes
                    "ADD WIRDOW password 15 3",
                    "REMOVE WINDOW",
                    "CALL puchock"
  }
 WIEDOW introvindow2 {
     Par Lond
     num_columns
                  78
     معدد
                   5, 0, 5, 77
                   selact, 6, 3
introtxt, 7,15, "ADD WINDOW introduction 3 1"
assessment, 0, 2, "CALL peprobet"
housekeeping, 0,44, "CALL pedbhack"
      textline
     button
     button
     button
  1
 SCREEN firstscreen (
    titlescreen TES
    border
                  THE
    title
                  "ASSESSMENT SYSTEM FOR AIRCRAFT MOISE (ASAS)"
    Window
                  introvindow1, 1,1
   Window
                 introvindow2, 13,1
BOXTON OPERAGO {
   ATE POPE 3
   num_columns 41
taxtline opensontxt, 1, 3
border YMS
   helpfile help/whlops.hlp
BUTTON opsteady (
   MUEL FOWD
   num columns 41
   taxtline opthrayrtxt, 1, 3
border res
   border
   belpfile belp/evenope.hlp
BOTTON mulbut00 {
   AUE FORD 1
   aum columns 1
   helpfile help/mulbet.hlp
```

```
BOTTON mulbetol (
   num rows 1
     helpfile help/mulbut.hlp
  num_rows 1
num_columns 1
helpfile help/mulbut.hlp
  BOTTON melbetos (
     num rous 1
     helpfile help/mulbut.hlp
  BOTTON malbut04 (
     aum_rous 1
     num columns 1
     helpfile help/mulbet.hlp
  SUFFOR malbatos (
    num_columns 1
     helpfile help/mulbut.hlp
  MUTTON malbatos (
    aum rows 1
    hum columns 1
helpfile help/mulbut.hlp
 BOTTOW mulbut07 (
    num_rows 1
num_columns 1
helpfile help/nulbut.hlp
 BUTTON malbut00 {
   num_rows 1
num_columns 1
helpfile help/nulbut.hlp
 BUTTON mulbetos (
   aum_columns 1
helpfile help/mulbut.hlp
EUTTOW malbatio {
   aum rows 1
   num columns 2
   helpfile help/mulbut.hlp
BOTTOS mulbutli {
   num columns 2
   helpfile help/mmlbut.hlp
BUTTON mulbut12 (
  num rous 1
   helpfile help/mulbut.hlp
BUTTON malbat13 (
  am rows 1
  num_columns 2
helpfile help/mulbut.hlp
SUFFOR malbet14 {
  num_rous 1
  awa columns 2
  helpfile help/sulbut.hlp
```

```
)
 BUTTON mulbut15 {
    num rous 1
     num columns 2
     helpfile help/mulbut.hlp
 BUTTOS malbut16 {
    num rous 1
num columns 2
    helpfile help/mulbut.hlp
 BUTTON mulbet17 (
    aum_rows 1
    helpfile help/mulbut.hlp
 SUFFOW malbut10 (
    hem rows 1
    num_columns 2
helpfile help/mulbut.hlp
 BUTTON malbut19 {
    num rows 1
num columns 2
    belpfile help/malbut.hlp
          Declarations for MTR DATA MATRY SCHOOL
 SUFFOR stroughs (
      ama columns 40
     textline
belpfile
                      stremistrt, 0 ,2
                   holp/stacenis.hlp
SUFFOR selectio (
     num rows
num columns
textline
                      40
                    selecuistri, 0, 2
help/selecu.hlp
      belpfile
TEXTLEM spectaristat ("Specify new mission")
BUTTON specumis (
     BIES FOWS
      aux columns 30
     textline
                       specmunistri, 0, 2
     helpfile help/nemiss.hlp
WINDOW strdatestry (
   AUR TOWN 8
   num columns 70
                okgatr, 0, 2, "CALL peakgatr"
selacais, 2, 2, "CALL peatrais"
nodowntr, 4, 2, "CALL dumny"
spectawnis, 6, 2, "AND WINDOW newnions 13 3",
"UPDATE DATOM missame",
"CALL WRITERAM! Surses Window Datum Button",
   button
                abgatr,
   button
   button
                                    "CALL stropy oldscreen Screen",
   ĭ
WINDOW stramous {
   num columns
line
detum
                 78
                 2,0, 2,77
                 mirnen, 0, 2
mirdees, 1, 2
WINDOW mtrasmooml (
```

```
78
                        3,0, 3,77
                       mtraem, 0, 2
mtrdeec, 1, 2
                        missemel, 2, 2
             Declarations for DEFINE/MODIFY SCHEME (defnodatescreen)
  DATEM prelowalt (
        num rows 1
mum columns 10
        variable prelocalt, 0,1
  DATUM curlowalt {
       BED_TOWS
        num columns 29
        veriable
                         curlowalt, 0, 16 "Low altitude: "
        looder
        helpfile help/curlouit.hlp
  DATOM prefixtype (
        ama_columns 13
                    prefixtyp, 0,0
        veriable
        pickable
  DATES GUTTLETYPE (
      SEE LONS
       variable curfixtyp, 0,11
leader "Fix type: "
helpfile help/curfixtp.hlp
      Declarations for entering coordinates
 DATOM entlong (
       AUB_rows 1
       aum_columns 25
variable entlong, 0 ,11
lender "Longitude:"
helpfile help/markmap.hlp
 DATOM entlat (
     M continu
      num_columns 25
variable entlat, 0 ,11
leader "Latitude: "
belpfile help/markmap.hlp
            Declarations for show coordinates
DATUM shwlet {
    num_rous 1
    num_columns
                        14
      variable shwist, 0,0
pickable NO
helpfile help/combusp.hlp
  )
variable shwlong, 0 ,0
pickable BO
helpfile help/combmap.hlp
```

```
DATEM profindist (
        BER COLUMN 1
        variable prefinitet, 0,4
   DATOM ourfindist (
        and ross
                       24
         variable
                    curfindist, 0,16
         leader
         belpfile
                     balp/curfirdi.hlp
   DATOM profixed (
        num_rous 1
num_columns 6
variable prefixred, 0,4
        BUR POWE
   DAFTON GREFIERED (
        TOUR TOUR
        sum columns 26
Variable curfixred, 0,16
        leader
                       "Fix radial:
        belpfile
                    belp/curfire.hlp
  DATOM profixed (
       and columns 10
        variable prefixed, 0,4
      pickable
  DATOM ourfixed (
       hem rous 1
       num columns 26
        variable
                       curfixed, 0,16
                       "Fix ID:
       bolpfile
                       belp/ourfixed.blp
 DATM preservet {
    num_rows 1
    aum_columns 10
    vuriable preservet, 0,4
    pickable 20
 1
 DATCH GERRAPPE {
      num rows 1
      variable carnavpt, v,
                                   0, 16
      helpfile belp/oursevpt.hlp
 DATOM novetrem (
      BEE TOWN
      num columns 40
      variable
                      nountrem, 0,7
      leader
                      "Homo: "
      helpfile help/streatres.klp
BUTTON nestnevpt (
    num_rous 1
num_columns 15
tartline nertaceptrt, 0, 2
helpfile help/artnev.hlp
THEFTLINE retairements! ("Continue without selecting MFR")
THEFTLINE retairements! ("Continue without dreating mission")
THEFTLINE retairements! ("Save mission in database")
THEFT. INE retnomis
                          ("Continue without selecting mission")
```

```
SUFFOR retairest (
     DEED TOWN
     nes columns 40
     toxtline
                   retatreetst, 0 ,2
     bolpfile
                 help/nonemtr.hlp
  SUFFOS retairest1 (
     MEN POUR
     num columns 40
     textline
                   retritrentati, 0 , 2
     bolpfile
                 help/nomiss.hlp
  SUFFOR rotatreat2 (
     ME POW
     num columns 30
     textline retatrectxt2, 0 , 2 belpfile belp/seveniss.hlp
 BUTTON petnomie (
     aua_rous 1
    num columns 40
textline red
               retacmis, 0 , 2
help/nonewmis.hlp
     bolpfile
 WINDOW defendents
       Bun rows
                      15
       aum_column
textline
                      78
                     curpretat,
                                    0, 16
       textline
                     ourprotet3,
                                    1, 16
       detug
                                    2, 1, "CALL VCAPITAL &GURRAUPT",
                     curnevpt,
                                             "BEWVALG"
       detw
                     pressypt,
                                    2, 26
       datum
                     ourfixed,
                                   3, 1, "CALL VCAPITAL Sourfixid",
       det un
                     prefixed,
                                    3, 26
                     ourflaxed,
                                    4, 1
       detun
                     prefixred,
                                    4. 26
       datus
                     curfirdist,
                                   5, 1
5, 26
       datus
                     prefinist,
       datus
                     entlet,
                                    2, 30, "CALL lat2dec Sent",
       detu
                                   2, 64
                     shwlet,
                     estlong,
                                   3, 38, "CALL lon2ded Sent",
                                            "BLEVALG"
       detun
                     shwlong,
                                   3, 64
                     curfixtype,
                                            "CALL VCAPITAL Sourfixtyp",
                                   4, 30,
                                            -MEMAYTO.
       datus
                     profixtype,
                                  4, 64
       datus
                                            "CALL sitided &curlowsit",
                     curlowalt,
                                   7, 2,
                                            "EMERUALS"
                                   7, 26
                    prelowalt,
                                   8, 2, "CALL alt2dec &curkighalt",
       detun
                     ourhighelt,
       datus
                    prohighalt,
                                   0, 26
      detus
                    curvidleft,
                                   9, 2
       datus
                    providleft,
       datus
                     correidright, 10, 2
       datus
                    prewidright, 10, 27
      dates
                    curartes,
                                   11, 2, "CALL VCAPITAL Courartoe",
                                            "HEWVALE"
                   precented, 11, 26 sentinevpt, 13, 2, "CALL artistrpt"
      bettos
BUTTON cancelmir (
     am rows 1
am_columns 35
taxtline canceletrit, 0, 2
     helpfile help/cendletr.hip
BUTTON savestr {
     num rous 1
     ATE COLUMNS 20
    textline seventrixt, 0, 2
helpfile help/seventr.hlp
```

```
)
  WIEDOW mtractica
         REEL FORM
         num colu
                         70
                         0,0,0,77
         bukkon
                                      1, 2, "CALL seventr"
                         seventr,
                         cancelstr, 1,40, "CALL cancertr"
  SCRUZIE docto
                 "DEFINE/MODIFY MER"
       title
                    mtraemoom, 2, 1
defmodatr, 6, 1
        wobatw
        window
       window
                    miraction, 20, 1
                    TRE
                     Declarations for SELECT ANOTHER MER SCREEN
 none showncentr (

num_rows 1

num_columns 37

taxtline showncentrixt, 0,2

helpfile help/shaustrs.hlp
 num_rows 1
num_columns 40
taxtline stneumtrtxt, 0,2
helpfile help/startutr.hlp
 WINDOW negatives (
    num columns 40
                     nountres, 0, 2
           strecelstr {
    BER POWS
                     stnowntr, 1, 2,
                     "ADD WINDOW novembran 6 3",
                     "UPDATE DATEM DOWNLING",
                     "CALL penustra a2bv.arr"
                    shownormetr, 1, 41,
"CALL mebunch"
    tertline
                     recallmentst, 3, 2
 WINDOW Gurdat {
    aum rows 10
    aum columns 32
     detum muldatoo, o, o
     datum muldat01, 1, 0
     datum muldet02, 2, 0
     datum muldat03, 3, 0
     datum smildet04, 4, 0
     detum muldet05, 5, 0
     datum muldatos, s, o
    datum muldat07, 7, 0
datum muldat08, 8, 0
datum muldat09, 9, 0
WINDOW surdet1 (
    num rows 10
     datum muldet10, 0, 0
     datum muldatil, 1, 0
     detum muldet12, 2, 0
     datum muldat13, 3, 0
     datum muldet14, 4, 0
     detum smldet15, 5, 0
    detum muldet16, 6, 0
detum muldet17, 7, 0
     datum muldatis, s, o
    datum muldetis, s, o
```

```
WINDOW cumstrbet (
        DEED FORD
        betton mulbetoo, 0, 0, "CALL MIRCORN deplant[0].arr"
        button malbut01, 1, 0, "CALL MIROGAN deplant[1].arr"
button mulbut02, 2, 0, "CALL MIROGAN deplant[2].arr"
       button malbut03, 3, 0, "CALL MERGORN deplan1t[3].arr-
button mulbut04, 4, 0, "CALL MERGORN deplan1t[4].arr-
button malbut05, 5, 0, "CALL MERGORN deplan1t[5].arr-
       betton sulbut06, 6, 0, "CALL MTRooms deplant[6].arr"
       betton malbuto7, 7, 0, "CALL MTROOM deplant[7].arr"
       button mulbutos, s, o, "CALL MTRooms deplumit[8].arr"
       button mulbut09, 9, 0, "CALL MTROOMS deplault[9].arr"
             ourstribut1 {
       PAR LOSS
                     12
       Bus columns 2
       button mulbet10,
                            0, 0, "CALL MIRGORN deploratt[10].arr"
       button mulbut11,
                            1, 0, "CML MTRocan deplanit[11].arr"
       button malbut12,
                             2, 0, "CALL MTRoom deplault[12] .arr"
       button mulbut13,
                             3, 0, "CALL MIROCON deplosalt [13] .arr"
       bettos mulbut14,
                             4, 0, "CALL MTRooms deplault[14].arr"
       button malbut15,
                             5, 0, "CALL MIRCOGE deplett[15] .arr"
       button mulbut16,
                             6, 0, "CALL MERCOON deplemit[16] arr"
       betton mulbut17,
       betton mulbut17, 7, 0, "CALL MTROOM deplanit[17] arr"
betton mulbut16, 8, 0, "CALL MTROOM deplanit[18] arr"
      button mulbut19, 9, 0, "CALL MTROOM deplault[19] arr
  WINDOW returnent (
       num columns 45
                   retutrest, 0, 1, "CALL meliste",
                                       "CALL postront"
      3
  screen characterscreen (
       title
              "SELECT ANOTHER MER"
       window mtracmoon, 2, 1
       window strecelstr, 5, 1
       window oursetribut, 9, 3
window oursetribut1, 9,42
       window
               ourdet, 9, 5
       window gurdet1, 9,44
       window retuitrent, 20, 2
       border YES
                          Declarations for new mir name
 DATUM detepubl (
      BUR rows 1
      ava columns 50
      variable datepubl, 0, 22
leader "Date of publication: "
      helpfile help/datepubl.hlp
BUTTON definement (
     BER POWS 1
                    40
     sum columns 40
textline definestrixt, 0 ,2
helpfile help/getmap.hlp
WINDOW defaunts
      BEE PORD
                       9
      amm columns
datum
                      77
                      origatr,
                                    0. 1
      detun
                      ochodulo,
                                    2, 1
      datus
                      srods,
                                    4, 1
      datus
                      detepubl,
      button
                      definents.
                                    8, 1,
                                                   "CALL extetrpt"
SCREET mirdefinescreen (
     title
              "MER DEFINITION"
```

```
3,1
7,2
                    defauntr,
                     Declarations for MISSICH REQUIREMENTS WINDOW
  VARIABLE as in form (
       type
format
                      42d
       lowlimit
                     1
        wplinit
                      16
                      2
  VARIABLE perstant (
foundin "VARCHAR pr_per_s.arr"
       type
format
                     STRING
                     4-60
  DATOM perstant (
     veriable
                  10
                   perstant, 0, 2
     leader
     pickable
  VARIABLE mistype (
type STRING
 DATOM mistypel (
      num rows 1
       variable
                   mistype, 0, 14
"Mission type:"
help/mistype.hlp
      leader
      helpfile
 DATOM mistype {
      num_oolumes
                  mistype, 0, 14 "Mission type:"
      veriable
      leader
      pickable
                     120
 VARIABLE presitiev (
formalin "ALTEREC prelomait.spec"
      type
format
                    STRING
                     400
DATEM presitiev (
     num columns 10
variable presitiev, 0, 0
pickable 20
VARIABLE curaltley
     foundin "ALTEFEC curlowalt.spec"
     type
format
                   STRING.
                    490
DATEM curaltiev (
     DES TORRE
     num columns 21
     veriable
                    Curaltlev, 0, 11 "Alt:
     leader
     holpfile
                 help/ultatr.hlp
VARIABLE ad pre pur (
```

```
type
format
                      DOUBLE
                      $12.31£
       lowlimit
                      0.0
       walinit
                      4000.0
       default
                      100.0
  DATEM propurset (
       RUE POWS
       atta columns
                    12
       variable
                    ac pro pwr, 0, 0
       pickable
  VARIABLE so_our_pur
       type
       formet
                     410.31£
       lowlimit
                     0.0
       molimit
                     4000.0
       default
                     100.0
   1
  DATOM curpurset (
       REEL POUR
       aum_columns
                   21
       variable
                     as car pur, 0, 11
       belpfile
                    help/pwrspec.hlp
 VARIABLE as pre-spd (
type introduce
formet 43d
 DATEM prospood (
      aum rows 1
aum columns 9
      veriable
                    ad_pre_spd, 0, 0
                 ec_pr
      trailer
                  250
     pickable
 VARIABLE ac dur spd {
    type
formet
    lowlimit
                  100
    uplimit
                  600
    default
                  450
 DATTM curspeed {
     htm rows 1
htm columns 21
variable ac
                    ac_our_spd, 0, 11
     loader
     trailer
                    "Ers"
     helpfile
                 help/strspeed.hlp
DATEM prenavpt1 {
    aum_rows 1
    aum_columns 3
     variable premavpt, 0,0
     pickable
DATOM GERBEVPt1 (
     BUR PORM
     aum columns
                 21
                  curacypt, 0, 11 "Maypoint:"
     variable
     leeder
     helpfile help/nevnme.hlp
THEFT. IN canciparatit ("Cancel data entry for this mission")
BUTTON cancipera (
    num columns 35
               canciperatat, 0, 2
help/cancier.hip
     belpfile
```

```
)
   TEXTLES saveparetet ("Save this mission's data")
   BUTTON savepara (
        nua rows
                        20
                          saveparatxt, 0, 2
        helpfile
                         help/saveniss.hlp
  THITLES operdatatit ("Ready to enter operational data")
  BUTTOW operdate (
      hen columns
                        33
        textline operdstatxt, 0, 2
helpfile help/entrope.hlp
  TRATELOCK mir (
mum rows 10
mum columns 30
filesome trat
                      tatblk/str.tat
  TREFLIE Striabeltst ("MAY FIX
                                                    FIX TYPE
                                                                      HIDRE" }
 THATLINE EXITE ("REFERENCE INFORMATION FOR DATA METRY")
  TRATELES GREPTOTALL ("CURRENT PREVIOUS")
  TEXTLES Ourprotet2 ("-----
 HIMDON OPERTRY (
    nun rows
    aum_rows 10
aum_columns 78
button openady, 2, 19, "CALL penddops 1"
button openason, 7, 19, "CALL penddops 12"
                         10
 WINDOW fitpers (
      num columns 70
        detun
detun
                        mistype,
somme,
mtrtst,
                                       0, 2
        textline
                                       0,40
        textline
                        striabeltzt, 2,38
        tertline
                        ourpretzt1, 3,14
ourpretzt2, 4,14
        textline
        datos
                        oursavpt1,
                                      5, 1, "CALL VCAPITAL &cursavpt",
                                               "HEWVALS"
        datus
datus
                        presevpt1,
                                      5,25
                        prespeed,
                                      7, 1
        datus
                                       7,25
        datus
                        curpurset,
                                      9, 2
                       propurset, 9, 2
propurset, 9,22
pwrstunt, 10, 15
curaltlev, 12, 2, "CALL alt2dec Scurlowalt",
        datum
        datum
        detm
                                               "BEWVALE"
                       prealtley, 1:
1, 37, 14, 77
3, 38, 3, 76
15, 0, 15, 77
       datus
                                      12,23
       box
       Line
       Line
                       partneyst, 14, 2, "CALL artmispt"
operdata, 16, 2, "MEN SCREEN opertry"
cancipara, 16,40, "CALL cancers"
       button
       button
       bettoe
                      mtr,
                                       4,38
SCHOOL Estefit (
     title
window
                   "FLIGHT PARAMETER MITHY"
                  stramoom, 2,1
fltpara, 5,1
      wobalw
                                   5,1
                  TES
SCREEN OPERATION DATA MATER FOR MER-
                  stranson, 3,1
     window
                  opentry,
```

```
Declarations for seasonal MTR and REQUIREMENTS
 DATON demite (
       num rows 1
num columns
variable
                       6
docuite, 0, 0
       helpfile
                       help/mathaite.hlp
 DATUM decday {
    num_rows 1
    num_columns
                     10
                       deodey, 0, 5
       veriable
       leader
       belpfile
                       help/mathday.hlp
 DATOM novaite (
       aum_rous 1
       awa columns d
       variable
                       novmite, 0, 0
help/mathmite.hlp
       helpfile
   1
 DATOM BOVERY (
       num rows 1
       sem_oolumns
                      10
       variable
                       movday, 0, 5
       loader
       helpfile
                       help/methday.hlp
 DATOM octaite (
      aum_roes i
aum_columns
variable
                       octaite, 0, 0
help/mathaite.hlp
       helpfile
 DATOM octday (
      num_rows 1
num_columns
variable
                     10
                       octday, 0, 5
      leader
                       help/mathday.hlp
      belpfile
DAFFOM sepaits {
     ave columns
                      sepaite, 0, 0
help/mathmite.hlp
       variable
      helpfile
DATEM septemy (
aum_columns 10
      variable
                      sepday, 0, 5
      leader
     belpfile
                      help/mathday.hlp
DATEM auguite (
     num_rows 1
num_columns 6
variable su
helpfile he
                      augmite, 0, 0
help/matheite.hlp
DATOM augus (
num columns
variable
                    10
                      augday, 0, 5
      leeder
                      help/mathday.hlp
      helpfile
DATOM julaite (
```

ì

```
nes columns
        variable
                       julnite, 0, 0
       belpfile
                     help/mathaite.hlp
  DATES julday {
        ama columns
                       julday, 0, 5
       variable
       lender
       belpfile
                       help/methday.hlp
 DATOM junnite {
    num rows 1
    num columns
    variable
                      junnite, 0, 0
help/muthnite.hlp
       belpfile
    }
 DATTM junday {
    num_rows 1
    aum_columns 10
    vuriable jun
                    junday, 0, 8
"Just:"
help/mathday.hlp
       belpfile
 DATUM maynite {
   aum_rows 1
   aum_columns 6
       veriable
                      maymite, 0, 0
     belpfile help/mathnite.hlp
 DATOM mayday (
       num columns 10
       variable mayday, 0, 5
leader "MAY:"
     belpfile
                     help/mathday.hlp
   }
 DATOM opraite (
      num rows 1
       variable
                      apraite, 0, 0
help/anthnite.hlp
      helpfile
DATOM aprday (
      num rows 1
      variable
                      aprday, 0, 5
      leader
      helpfile
                    help/mathday.hlp
DATOM marmite {
     num columns 6
      veriable
                    marnite, 0, 0
help/mathmite.hlp
      helpfile
DATUM marday (
     num rows 1
num columns 10
                     marday, 0, 5
      veriable
     leader
     helpfile
                     help/mathday.hlp
DATOM febuite {
    and columns
     variable febrite, 0, 0
belpfile belp/anthnite.hlp
 }
DATOM febday (
   num rous 1
```

```
bolpfile
                         help/mathday.hlp
  DATEM jessite (
       aum rous 1
                        6
        variable
                         jamaite, 0, 0
       bolpfile
                         holp/mathaite.hlp
 DATM janday (
ana_rows 1
ana_columns
variable
                        10
                        janday, 0, 5
       leader
        helpfile
                        help/mathday.hlp
 WINDOW month (
       aus columns 77
       textline instrict, 1, 1
textline depaite, 3, 0
datum janday, 4, 1
       datum janday,
datum janmita,
datum febday,
                              4,12
                              5. 1
       datum febuito,
                              5, 12
        datum marday,
                               6, 1
        detum maraite,
                               6, 12
        detus aprday,
                               4,20
       datum apraite,
                              4,31
       detum mayday,
                              5.20
       detus
               meymite,
                              5,31
        datum
               junday,
       detus
               junnite,
                              6, 31
       datum
               julday,
                              4,39
       datus
               julnite,
                              4,50
       datum augdey,
                              5,39
       detum augmite,
                              5,50
       datum sepday,
datum sepaito,
datum cotday,
                              6,39
                              6,50
                              4,58
               octaite,
       detus
                              4, 69
               Bovday,
                              5,38
               sovaite,
       datus
               deoday,
                              6,50
       datum decmite,
                              6, 69
      button savepara, 13, 2, "CALL savemis"
button cancipara, 13,40, "CALL concesis"
        Declarations for new SELECT AIRCRAFT AND MISSION FOR MER
TEXTLUE shemoremistri ("Show more mission names (if any)")
BOTTOM shomoremis (
      hum rows
aum columns
textline
helpfile
                       30
                      shumoremistri, 0, 2
holp/shumiss.hlp
TEXTLINE receimis ("Receil one of the following missions")
WINDOW MOUNTAINS (
   aum rows 1
aum columns 40
datum mis
                    misnume, 0, 2
WINDOW CERMINS (
                 16
    BUR FOWS
    aum columns 78
                             1, 2, "ADD WINDOW novemisms 7 3", "UFDATE DATOM misneme",
                                     "CALL penumien cid.arr"
    button shumoremis, 1, 40, "CALL sebunch"
textline receimis, 3, 2
```

febday, 0, 5

variable

```
datum muldatoo,
      datum
            muldat01,
                           5, 4
      detun
             muldat02,
                            6, 4
      datus
            muldet 03
      data
            pmldet04
                           6, 4
      detw
            muldet05.
                           9. 4
            muldat06,
                           10, 4
            muldat07,
                           11. 4
            muldetos.
                           12. 4
            maldatos,
      4-4-
      detum muldet10,
                           4,42
      datum maldet11,
                           5, 42
      dotum muldet12,
                           6, 42
      detus suldet13,
                           7.42
      datum muldat14,
                           8.42
      datum nuldat15,
                           9.42
      detum muldatis.
                           10.42
      datus
           muldet17,
                           11,42
      datum
            muldat18,
                           12,42
     datum muldet19,
                           13,42
     button
            malbut00,
                           4, 2, "CALL MISGORN deplement[0].arr"
     button mulbet01,
                           5, 2, "CALL MIScoon deplement [1] .arr"
     button
             mulbut02,
                           6, 2, "CALL MISCORE deplacit[2].arr"
     button
            mulbut03,
                           7, 2, "CALL MISCORN deplomit[3].arr"
                           8, 2, "CALL MISCOON deplanit[4].arr"
     button
            mulbut04,
     button
                           9, 2, "CALL MISCORN deplanit[5].arr"
             mulbut05,
                           10,2, "CALL MISCORN deplault[6] arr"
     button mulbutos,
     button
             mulbat07,
                         11, 2, "CALL MISCORN deplault [7] arr"
     button mulbutos,
                         12, 2, "CALL MISCORN deplemit[9] arr"
     button mulbutos,
                         13, 2, "CALL Miscoon depleult[9].arr"
     button
            mulbut10,
                           4,40, "CALL MISCORN deplant[10].arr"
     betton
            malbut11,
                          8,40, "CALL MISCORE deplement[11].arr"
     betton
                           6,40, "CALL MISCONN deplault[12].arr"
             malbut12,
            mulbut13,
     button
                          7,40, "CALL MISCORE deplanit[13] arr"
            malbut14,
     button
                          8, 40, "CALL MISconn deplanit [14] .arr"
     batton
            mulbut15.
                          9,40, "CALL MISCOON deplusit[15].arr"
     button
            mulbut16,
                         10,40, "CALL MISCORN deplanit[16].arr"
11,40, "CALL MISCORN deplanit[17].arr"
     button mulbut17,
     button mulbut18,
                         12,40, "CALL MISCOUN deplumit[18] arr"
                         13,40, "CALL MIScoon deplanit[19].arr"
     buttoe mulbut19,
     button retnomis,
                         15, 2, "CALL selista",
                                 "CALL MEN SCREEN oldsgroom"
TRATELES solmisstrt ("Select mission")
 BUTTON polnies {
     ME TOWN
     nun columna
                    36
     textline
                     selmisstat, 0, 2
     balpfile
                   bolp/soluiss.hlp
TEXTLINE fitperinftrt ("Specify flight persmeter information")
BOTTOM fltparinf (
     BUB FOWS
     ave_columns
     testline
                    fitperinftrt, 0, 2
     balpfile
                    help/fitperem.hip
WINDOW selection (
     SWE TOWS
                        15
     au column
                         77
     datum acmomel,
                        1,1, "CALL vfysomer tid.arr"
     button salmiss,
                        3,2, "CALL pechanie"
     button fitperinf, 5,2, "CALL postrfit"
betton returnet1, 13,2, "CALL communis"
scress spentrais (
    title
                "SELECT AIRCRAFT AND MISSION FOR MER"
     window
               mtrammocmi, 3,1
     Window
                selection, 7,1
SCREEN chamis
               (
"SELECT AIRCRAFT AND MISSION FOR MER"
    title
    window
               mirnsmoomi, 2,1
    window
               cumise, 6,1
```

```
THE
        Declarations for Day-Wight window
    DATOM might (
         nun rous 1
          variable
                          might, 0, 8
         leador
                           "Might:"
         bologila
                          help/aitcops.hlp
   DATOM day (
         BEEL FORE
         num_columns 16
                          day, 0, 6
         variable
         looder
         belpfile
                          help/dayope.hlp
   WINDOW dayaite (
         num rous 12
        num_columns 77
datum accume, 1, 1
tartline instr2txt, 3, 1
datum day, 5, 2
datum aight, 5,15
button savepare, 10, 2, "CALL expeope",
"CALL savenis"
        button dancipers, 10,40, "CALL conquis"
border YES
           Declarations for mission specification window
  DATOM sortia (
       aum_rows 1
aum_columns 37
variable ac_in_form, 0, 35
leader "Fumber of aircraft in formation: "
helpfile help/numform.hlp
  VARIABLE misdess (
     foundin "VARCEAR misdesc.arr"
                                               "this description is for mission
     type STRING
format 4-60s
 DATOM misdossi (
    ME TOWN
     aum_rows 1
aum_columns 76
    variable misdesc, 0, 7
leader "Descr:"
pickable mo
 DATTM misdesc (
    BUR TOWN
    RUS GOLUMNS 76
    variable misdesc, 0, 14
Leader "Description:"
    helpfile help/misdesc.hlp
HINDON SETTLE NOBELN
   num_columns 78
line 2,0,
datum miss
                   2,0, 2,77
misnamel, 0, 2
misdesci, 1, 2
WINDOW misspec (
   aum rous
                            16
    aum_columns 77
datum misdosc, 1,1
```

```
datum mistypel, 3,2
datum sortie, 5,2
     datum sortio, 5,2
button retutrenti, 14,2, "CALL MEN SCHEME oldscreen"
     button rotutrent2, 14,47, "CALL entamis"
 SCHEEN misspec (
        window
                   mirromoon3, 3,1
        window
                     misspec, 6,1
                     THE
 -01-14-88 st will try to fix this file so it wil be only for assessments obligated with date of the st change will be commented with date of the st change title on first screen, change lat. long. format long
                     map control
  -01-17-88 et
                     con't to fix sdf file commented with 1-17-88
 - DECLARATIONS FOR SCHOOL BRADER
  VARIABLE sesences (
      foundin "ASAMBEADR ASSESSMENT, DODG"
    type STRING
formet 4-30s
 DARTE assessme (
      BUR TOWN 1
      aum_columns 50
      variable assenzae, 0 , 18
leader "Assessment name: "
      londor
      pickable 30
 DATOM essenmel (
      BUEN POWE
      variable assesse, 0 , 30 lander "Nome of current assessment: "
 VARIABLE ocument {
   foundin "ASAMMEADR ASSESSMENT".dosg"
    type STRING
formet 4-66s
DATCH comment {
     num_columns 76
variable comment, 0 , 10
*Comment: *
    pickable
VARIABLE curnopum (
type string
formet 4-30s
DATOM GERMAPARE (
    AUS columns 77
     Variable cursepass, 0 , 19
leader "Current map name: "
    pickable E0
WINDOW lin {
aum rows 1
aum columns 78
line 0,
                     0, 0, 0,77
WINDOW RESIDENCES (
     num_columns 78
                     assensel, 0,1
```

```
2, 0, 2,77
   WINDOW assamount (
       Bun columns
                     78
       detun
                     assensmol, 0, 0
                    ourment, 1, 1
curmapass, 2, 1
3, 0, 3,77
   - Declarations for buttons used in majoraction footer
  THEFTLINE probetatut ( "NEVIEW CORREST ASSESSMENT STATES" )
  BUTTOW probetat (
       num rows 1
      textline probetatzt, 0, 2
helpfile help/probetat.hlp
  THETLER probatatite ( "REVIEW ASSESSMENT STATUS" )
  BOTTOM probetat2 {
      ave ross 1
      awa columns 26
      textline probstatxt2, 0, 2
helpfile help/revetat.hlp
  THITLINE probder ("ADD DEFORMATION TO CURRENT ASSESSMENT" )
  BUTTON probdef (
     num columns 39
                 probdef, 0, 2
help/probdef.hlp
      belpfile
 TEXTLINE probdef1 ("ADD TO ASSESSMENT DEFINITION" )
 EUTTON probdef1 {
    ava rows 1
     textline
     tertline probdef1, 0, 2
helpfile help/probdef.hlp
 TEXTLINE enclysis { "AMALYEE DATA" }
BUTTOW analysis {
     BUE FORS
     aum rous 1
     textline analysis, 0, 2
helpfile help/dstanal.hlp
TEXTLINE report gen { "MAKE A REPORT" }
EUTros reportgen {
    num columns 16
textline
    textline
                 reportgem, 0, 2
    helpfile
                help/reportges.hlp
TEXTLINE TWOMPLISTED { "VIEW CHECKLIST FOR CURRENT ASSESSMENT" }
SOTTON Vechklist {
   PAR LOAM
   num_columns 42
textline vwohklistrt, 0, 2
helpfile help/viewlist.hlp
```

Declarations for majoraution footers

```
WINDOW majorantion (
                                           -header for problem status screen
        atta columns 70
        line
                           0, 0, 0,77
        title
                           "Alternative actions you can now take:"
                          probdef, 2, 2, "HEW SCHEEN probdefscreen"
analysis, 2,56, "HEW SCHEEN analysiscreen"
vechilist, 3, 2, "HEW SCHEEN viewshooklistscreen
reportges, 3,56, "CALL dramy?"
        button
        button
        button
  WIMPOW majoractical ( -header for problem definition screen
        BED_PORP
        aum columns 78
                        0, 0, 0,77
        title
                        "Alternative actions you can now take:"
        button
                        analysis, 2, 2, "MEN SCREEN analysis Groce"
        button
                       probetat2, 2,48, "CALL peprobet"
                        weahlist, 3, 2, "MEN SCHEEN viewchecklistscreen"
reportgen, 3,48, "CALL desmy2"
       button
       button
  WIEDOW majoraction2 (
                                      -header for data analysis sursen
        BUR FOUR
        aus columns 78
       1480
                       0, 0, 0,77
       title
                        "Alternative actions you can now take:"
                      probdef, 2, "NEW SCREEN probdefsurees"
reportees, 2, 47, "CALL dumny2"
wachklist, 3, 2, "NEW SCREEN viewchooklistsurees"
3, 47, "CALL psprobst"
       button
       bettoe
       button
- WINDOW majoractical ( "header for report generation screen
       BUR POUR
       nus column 78
       1120
                       0, 0, 0,77
                      "Alternative motions you can now take:"
weaklist, 2, 2, "MEW SCREEN viewchecklistscreen"
probetet2, 2,47, "CALL peprobet"
probdef1, 3, 2, "MEW SCREEN probdefscreen"
analysis, 3,47, "MEW SCREEN analysiscreen"
       title
       button
       button
       button
 WINDOW Emjorations ( -header for view checklist screen
      BER POWS
       aum columns 70
      1100
                       0, 0, 0,77
                       "Alternative actions you can now take:"
      title
                      "Alternative socioes you can now taxe: -
probetat2, 2, 2, "CALL peprobet"
reportpes, 2,47, "CALL dummy?"
probdef1, 3, 2, "HEW_SCREEN probdefscreen"
smalysis, 3,47, "HEW_SCREEN analysiscreen"
      button
      button
      button
                     probdefl,
      button
  }
 THETE. DE LOCATION LOCAL DATA FOR CEMERAL ACCESS")
BUTTOS loadglobal
    BEE FOWS
    num columns 35
textline loadglobel, 0, 2
helpfile help/loadglob.hlp
WINDOW majoraction5 (
                                       -footer for database housekeeping serees
    BES TONS
      num columns 76
      1100
                   0, 0, 0,77
"Alternative actions you can now take:"
     title
     button loadglobal, 2, 2, "CALL dumny"
button assessment, 3, 2, "CALL peprobet"
screen stratey (
    window mtracmoom, 3,1
window mtracmoom, 7,1
window mtractentry, 7,1
window majoraction3, 10,1
    border
```

```
Declarations for problem status screen
 VARIABLE startdete (
    foundin "VARCHAR startdate.arr"
type STRING
format %-21s
 DATOM startdate (
     awa_rows 1
     nes columns 40
    variable startdate, 0 ,15
leader Date started: *
pidmble 80
 VARIABLE lestdate (
     foundin "VARCHAR lastdete.arr"
     type STRING
format 4-21s
 DAFOM lastdate (
    num_rows 1
num_columns 55
variable lastdate, 0 , 20
leader "Date of last modification: "
pickable NO
 VARIABLE plantlast (
    foundin "VARCEAR plantist.arr"
    type STRING
format 4-30s
DATOM planriast (
    ama rows 1
    variable plantlast, 0 ,19
leader "Last modified by: "
pickable MO
WINDOW probetat (
    num rows 5
num columns 78
datum atm
                startdate, 0, 2
lastdate, 2, 2
planrlast, 4, 2
     datus
TEXTLESS character ("Work on a different assessment")
 BUTTON chance (
                                    -1-16-88
    aus columns 70
    WINDOW chansees {
                                 -change to different assessment
    aua columne 78
                chques, 0, 2, "CALL pechques"
         Declarations for ENVIRONMENTAL ASSESSMENT DEFINITION SCHOOL
TRITLINE moderatet ("Work with MOA information (number or type of sixereft, missions, etc.)")
BUTTON modmon {
    awa columns
                   76
    textline modeoctst, 0 ,2
```

}

```
balpfile belp/moswork.hlp
 THITLINE modelrint ("Work with MER information (number or type of mirroraft, missions, etc.)")
      DEED POURS
      aum columns 76
     textline modetrixt, 0 ,2
helpfile help/streerk.hlp
 TRITLINE modesptrt ("Nork with map information (designate land uses, update maps)")
 EUTTON modnap {
     BUR POUR
     aus columns 76
     textline modesptxt, 0 ,2
helpfile help/mepwork.hlp
 THITLINE selectit ("Actions you can now take to add information to this assessment:")
     BUR POWS 7
      aum columns 77
     textline selection, 0, 1
     button
                 modmap, 2, 1, "CALL dummy2"
modmir, 4, 1, "CALL pomironi"
modmon, 6, 1, "CALL dummy"
     button
SCRIM Probdefscreen {
title "ENVIRONMENTAL ASSESSMENT DEFINITION"
window assessment, 3,1
window selection, 7, 2
window majoraction1, 10, 1
           Declaration for entering coordinates window
THITLINE entupple
  ("Enter upper-left corner coordinates of eres of current interest")
TRATLINE entlowet
  ("Enter lower right corner coordinates of area of current interest")
DATOM shwlat2 (
      men_rows 1
      am columns
                      25
     variable shwlat, 0 ,11
leader "Letitude: "
helpfile help/combmap.hlp
DATEM shulong2 {
     num rous 1
      aum_columns 25
      variable shwlong, 0 ,12
     lender "Longitude: "
helpfile help/occhump.hlp
WINDOW extensor (
    BEE POWS
    aun_columns
                  78
                   estlet, 3, 1,
    textline
    detus
                                         "CALL latided Sent", "HEWVALS"
    datus
                   entlong,
                               3, 30,
                                        "CALL logided Seat", "MERVALS"
    textline
                   entlowet, 5, 2
shwlat2, 6, 1, "CMLL lat2dec &show", "MENVALS"
    datus
    datum
                   shwlong2, 6, 38, "CALL lon2ded &show", "HEWVALS"
        Declarations for Data away, vers screwes
```

TRETLINE geodetinqtxt ("Make geodeta inquiries on map sureen")

```
SUFFOR geodating (
     nun rows 1
     num columns 76
textline geodetingtst, 0,2
helpfile help/geoing.hlp
 TEXTLINE compacisaftst ("Compare noise affects") -1-17-88
                                                -1-17-00
 SUTTON companies (
     aun ross 1
     num columns 76
                                                -1-17-00
     tertline compacienfixt, 0 ,2
helpfile help/compacie.hlp
                                           ~1-17-80
~2-06-00
 TEXTLER columnisoftst ("Calculate noise effects in specified area")
 BOTTON calcactes (
     num rous 1
     num columns 76
     textline colonoiseftxt, 0,2
helpfile help/effcelc.hlp
 TEXTURE calcacisemptat ("Calculate noise exposure in specified area")
 BUTTON calcactsemp (
     num_rows 1
     num columns 76
     textline calcolosytat, 0,2
helpfile help/expcalc.hlp
TEXTLINE calcoptlocktst ("Calculate quicklock (point) esposure estimate")
 SUFFOR caloghicok (
                1
     BWG FOWE
     aum columns 50
     taxtline onlogklocktxt, 0 ,2
helpfile help/quklock.hlp
TEXTLES entocortxt ("Enter coordinates from keyboard")
 BUTTOS entocor (
     BES TORS
     aum columns 40
    tartline extocortat, 0 ,2
helpfile help/kbdntry.hlp
TEXTLES usemaptat ("Use map screen")
BUTTON RECENCE (
   num rows 1
num columns 30 textline
                                 usemaptit, 0 ,2
    helpfile help/usemap.hlp
THITLINE selectastrt ("Actions you can now take to analyze environmental assessment data:")
TEXTLES designourements ("Specify a geographic area of interest:")
WIMPOW datamaction (
    BEED_TOUR
                  11
    aum columns 78
    testline
                   selectanatri, 0, 2
calcotlock, 2, 2, "CALL dummy"
calcociscap, 3, 2, "CALL dummy"
    button
    button
    button
                    calcacisef,
                                    4, 2, "CALL dumy"
                                  5, 2, "CALL dumy"
    button
                    companient,
    button
                    goodsting,
                                    6, 2, "CALL dumy"
    textline
                    defgeoerestat, 8, 2
   button
                                9, 2, "CALL dummy2"
10,2, "ADD_NIMOWN entoor 5 1"
                   usemap,
                   extooor,
SCREEN analysiscreen {
   title "DATA AMALYSIS"
window assummon, 2,1
window detanaction, 6,1
```

```
window majoraction2, 18 , 1
border YES
 THEFTLIES showmoretat ("Show more assessments (if any)")
   shownore {
                     37
       awa_oolume
       textline showsoretxt, 0 ,2
      helpfile help/gotesmat.hlp
 THITLES recells stat ("Recall one of the following assessments:")
 TEXTLINE stnewasstat ("Start a new assessment")
          stacuass (
 SULTON.
      BEET LORS
      aum columns
textline
                     20
                       stnewasstat, 0 ,2
      helpfile
                       help/nomemat.hlp
      foundin
                  "VARCEAR n2by.arr"
      type
                  STRING
      format
                  4-30a
 DATEM novemen (
      BUR POWS
                      1
      BER colu
                       40
      variable
                      Downsber,
                                   0 , 7
                       "Hone : "
      helpfile
                      help/stnewnes.hlp
WILEDOW BOWS
      num colum
                       40
                            nam, 0,1
 WINDOW sta
                   {
                      1
      num columns
                      78
                                  0, 2, "ADD WINDOW BOTH
                                "UPDATE DATCH normsnem",
"CALL penwasen n2bv.arr"
                                           "CALL abunch"
                            ore, 0, 41,
 WINDOW receless (
      nem rows
                      1
      num columns
                     76
     textline
                      recallesstrt, 0, 2
          oursesbut {
        DES TORE
                       10
               malbut00,
        buttoe
                                       "CALL ASAMoonn deplanat [0] .arr"
                            0, 0,
                                       "CALL ASAMoonn deplant[1].arr"
"CALL ASAMoonn deplant[2].arr"
       button
                mulbut01, 1, 0,
        button
                 mulbut02, 2, 0,
       button
                 mulbut03, 3, 0,
                                       "CALL ASAMoonn deplemit[3].arr"
        button
                 mulbut04,
                             4, 0,
                                       "CALL ASAMoonn depleralt [4] .arr"
        button
                 mulbut.05,
                             8. 0.
                                       "CALL ASABoona deplanit [5] .arr"
       button
                 mulbutos, 6, 0,
                                       "CALL ASSESSORS deplement[6].err"
       button
                 mulbut07, 7, 0,
                                       "CALL ASAMoonn deplanat [7] .arr"
                                       "CALL ASAMoonn deplement [8] .arr"
       button
                 mulbetos, s, o,
       button
                 malbutos, s, o,
                                       "CALL ASAMoonn deplanat [9] .arr"
HIEDON
          curasabut1 {
       PAST LOAS
       hum columns 2
button malbutl0, 0, 0,
button mulbutl1, 1, 0,
button mulbutl2, 2, 0,
                                       "CALL ASAMoonn deplant[10].arr"
                                       "CALL ASSMOORN deplement [11] .arr"
                                       "CALL ASAMoonn deplault [12] .arr"
       button mulbut13, 3, 0,
button mulbut14, 4, 0,
                                       "CALL ASAMoonn deplault[13].arr"
                                       "CALL ASAMoons deplant[14].arr"
```

```
malbut15, 5, 0,
            button malbut1s, s, u, button malbut1s, G, O, button malbut1s, T, O, button malbut1s, S, O, button malbut1s, S, O,
                                             "CALL ASAMooan deplanat [15] .arr"
                                             "CALL ASAMoonn deplant [16] arr"
                                             "CALL ASSESSOON deplement [17] .arr"
                                             "CALL ASSESSORS deplanit[10].arr"
                                             "CALL ASAHoona deplamit[19].arr"
     THEFTLINE retness ("Continue without selecting assessment")
     BUTTOW reteseest (
       BER POUG
                     1
       helpfile help/nonsees.hlp
    MINDOW TOURCES (
       BEEF TORS
       hatton ret
                   rotassemt, 0,1, "CALL misto", "CALL peprobet"
    schum chgouressoreen (
         window
                     000000000, 2,1
         window
                     strowns, 6,1
         window
                     rocalass, 8,1
         window
                     curassbut, 9,3
         window
                     ourassbut1, 9,42
         Window
                     ourdat,
                                9, 3
         window
                     ourdet1,
         window
                     retwooss, 20,2
                     YES
           Declarations for NEW ASSESSMENT DEFINITION
   VARIABLE entdesd1 ( 'VARCHARSO entdesd[0].arr'
       type smans
                  4-600
  DATOM catdood! (
      num rous 1
       variable extdesci, 0,0
helpfile help/extdesc.hlp
 VARIABLE estdess2 (
      foundin "VARCHAR60 entdesc[1].arr"
       type
                  STRING
       format 4-60s
DATOM entdesci (
hum rows 1
hum columns 75
variable entdesci, 0,0
helpfile help/entdesc.hlp
 VARIABLE estdessi (
     foundin "ARCHARGO entdess[2].orr"
type STRING
foundt 4-60s
  1
DATOM estdeed (
     aus columns 75
     variable entdesd, 0,0
helpfile help/entdesd.hip
VARIABLE entdesed (
     foundin "VARCHARGO entdesc[3] arr"
     type
                STRING
                4-60s
```

```
DATOM entdescé (
      aun rows 1
      num columns 75
variable entdeed, 0,0
helpfile help/entdeed.hlp
 THITLING entdescript ("Please enter a brief description for this assessment")
 DATOM Bossesses (
      num rows 1
num columns 77
vuriable newspam, 0,35
leader "Home of new assessment definition:"
  pickable NO
 ) sebases WOGELW
      nun_rows 9
      textline entdeastst, 3,4
               entdesci, 4,4
entdesci, 5,4
entdesci, 6,4
entdesci, 7,4
       detus
       detre
      datum
      datum
        Declarations for database housekeeping screen
 TENTLINE updateinfotzt ("Opdate information")
 BUTTON updateinfo (
      awa_rows 1
      num columns 50
      textline updateinfotxt, 0 ,2
helpfile help/updatein.hlp
TENTERN asstabletzt2 ("Frint list of all columns in an assessment's tables")
textline asstabletzt2, 0,2
      helpfile help/asstable.hlp
THITLINE asstabletztl ("Print list of an assessment's tables")
BUTTON asstable1 (
     num rows 1
     taxtline asstabletxt1, 0,2
helpfile help/asstable.hlp
TRITLINE associat ("Print list of all associants")
BUTTON RESERT (
    num_columns 50
tartline assesstrt, 0 ,2
helpfile help/achelp.hlp
TEXTLEM diddetetat ("Print all database dates")
BUTTON dedate (
     aum rows 1
aum columns 50
     textline dbdatetxt, 0 ,2
helpfile help/dbdate.hlp
TEXTLINE dhhealpgirt ("RARIDEG: Actions you take on this screen affect ASAH'S permanent databases!")
```

```
13 (
 WOODELLE
            dhiselpgastica
            BUR FOR
            nen_oolu
                           78
            1120
                           0,0, 0,77
            textline
                           dbbsokpgtzt,
                                          2.2
                                       4,2, "CALL dummy"
6,2, "CALL pratabo"
                           didate,
            button
            button
                           0.00000,
                           assess, 6,2, "CALL pratabo"
asstable1, 8,2, "CALL SUpropt 1"
asstable2, 10,2, "CALL SUpropt 2"
            betton
            button
            button
                           updatainfo, 12,2, "CALL du
 SCHEEK dobsekpgscreen (
                  "DATABASE SOUSERESPING"
      title
      window
                  dbheekpgastion, 2,1
      whadow
                  majoraction5, 18,1
                  THE
 WINDOW quickassbut {
        DEST_LOND
        num columns
                      2
        button mulbutoo, 0, 0,
                                        "CALL SOprist deplacation].arr"
                 mulbut01, 1, 0,
        bettos
                                        "CALL SUprist deplsuit[1].arr"
                                        "CALL SUprint deplorat [2] .arr"
                mulbut02, 2, 0,
        betton
                 mulbutos,
        button
                             3, 0,
                                        "CALL SOprint deplanit[3].arr"
        button
                 mulbut04,
                                        "CALL SUprist deplsuit[4].arr"
                              4, 0,
        button
                  malbut05,
                                        "CALL SUprist deplanit[5].arr"
        button
                  mulbut06,
                             6, 0,
                                       "CALL SUprint deplanit[6].arr"
        betton
                 mulbut07,
                             7, 0,
                                        "CALL SUprist deplosit[7].arr"
        betton
                 mulbutos, s, o,
                                       "CALL SUprint deplumit[8].arr"
                 malbutos, s, o,
        buttou
                                       "CALL SUprist deplanit[9].arr"
WINDOW quickssabut1 (
        num rous 10
       BER TOWN
        button mulbut10, 0, 0,
                                       "CALL SUprist deplosit [10] .arr"
        button mulbutil, 1, 0,
                                       "CALL SUprint deplault[11] .err"
        button mulbut12, 2, 0,
                                       "CALL SUprint deplault[12].arr"
        button
               mulbut13, 3, 0,
                                       "CALL SUprint deplanalt[13].arr"
        button
                 mulbut14, 4, 0,
                                       "CALL SOprist deplault[14].arr"
        buttoe
               malbut15, 5, 0,
                                       "CALL SUprist deplemit[15].arr"
               mulbutle, 6, 0,
        betton
                                       "CALL SUprist deplett[16].arr"
                                       "CALL SUprint deplanit[17].arr"
        button mulbut17, 7, 0,
               mulbut18, 8, 0,
mulbut19, 9, 0,
        betton
                                       "CALL SUprist deplsuit [18] .err"
        button
                                       "CALL SOprint deplouit[19].arr"
THITLINE susaloct ("Frint list of SUPERUSER's tables")
THITLINE Aqualoct ("Frint list of HEADQUARTERS' tables")
BOTTON suselect (
     num rows 1
      textline suselect, 0 ,2
      helpfile help/nobelp.hlp
         hqualect (
     aum rows 1
num columns 50
     textline hquelect, 0 ,2
helpfile help/nohelp.hlp
WINDOW retwopen (
   BUR FOWS
   aum columns 76
                 retassent, 0,1, "CALL ulisto", "MEM_SCREEN dohselpgsoreen"
MINEDOW begansalect (
  Bun Town
   aum columns 76
               hquelect, 0,1, "CALL SUpropt 3"
suselect, 2,1, "CALL SUpropt 4"
  button
  bettoe
SCREEN Slossoreen (
```

```
"SULECT ASSESSMENT FOR DATABASE PRINTOUT"
title
window
           hqsuselect, 4,1
recelses, 8,1
window
           rocalass,
           quickssabut, 9,3
window
           quickossbutl, 9,42
                      9,5
           ourdet,
window
window
           cordet1,
                        9,44
           retuopra,
                     20,2
           YES
```

```
Declarations for view CHECK-LIST SCREEN
THITLINE otherchkist ("View another checklist")
MUTTOW otherskist (
      num rows 1
num columns 25
terrline otherchkist, 0, 2
helpfile help/othrchk.hlp
                           othershklet, 0, 2
filenme tril
filenme tril
num_rows 10
num_columns 76
horder THS
                           tatblk/fossif.tat
WINDOW fone12 {
    num_rows 13
    num_columns 78
    taxtblook fone12, 0,1
    button otherchkist, 12,2, "REMOVE_WINDOW"
THERMOOK fonsil (
      filesene tri
                           trtblk/foosi1.trt
                        YMG
WINDOW foasil (
aum_rows 13
aum_columns 78
      num_columns 78
textblook fossil, 0,1
textblook fossil, 12,2, **REMOVE_WINDOW**
TEXTRLOCK ostax3 {
      filenme tri
num rows 10
num columns 76
border TES
                           txtblk/oston3.txt
                        TRE
WINDOW COLUMN
      ama_rose
ama_columns
textblock
                          13
                       13
78
                          caterl, 0,1
                          othershklet, 12,2, "REMOVE WINDOW"
TEXTELOGE cates2 (
      filename
hum rous
hum columns
                         txtblk/ostex2.txt
                      10
76
WINDOW cotast2 {
```

BEE TOWN

```
testblock
                            ontex2, 0,1
othershist, 12,2, "NEGOVE_WINDOW"
          button
   THITPLOCK sater1 (
        filenese
                            tatblk/cateri.tat
         BEER TOWN
                            10
         num columns
border
                            76
                            THE
   WINDOW cateri
                         - (
        num rows
num columns
textblock
                            13
                            79
                            categi, 0,1
                         otherchkist, 12,2, "REMOVE WINDOW"
         button
  THEFLIRE fossitte {
"Show documentation necessary for finding of no significant impact"}
  BOTTOM fonsi2 (
        REE TOWN 1
        num columns
                          72
        textline fossi2txt, 0, 2
helpfile help/fossi2.hlp
  TRUTLING foasiltst (
"Show MEPA bases for finding of no significant impact (FORSI)")
  BUTTOM fonsil (
        aum rose 1
aum_columns 65
textline fonsiltxt, 0, 2
helpfile help/fonsil.hlp
 TEXTILES contextitat ("Show documentation needed for categorical exclusions")
 BUTTON COLORS (
       ama_rows 1
ama_columns 55
       textiine cateritat, 0, 2
helpfile help/cateri.hlp
 TRETLINE ontexitat (
  "Show examples of proposed actions qualifying for categorical exclusions")
 BUTTON ORTHAND (
      BUR COURS 1
      textline catex2txt, 0, 2
helpfile help/catex2.hlp
TEXTLINE contexitat ("Show MEDA bases for categorical exclusions (CATEK)")
MOTTON OUTSEL (
      num rous 1
      num rows 1
num columns 55
taxtline cutexitxt, 0, 2
helpfile help/cutexi.hlp
Wimbow weekhist {
hum_rows 11
num_columns 78
line 0,0,0,77
                                      2,2, "ADD_WINDOW certax1 3 1"
4,2, "ADD_WINDOW certax2 3 1"
6,2, "ADD_WINDOW certax3 3 1"
         betton ostari,
        button catery,
button catery,
button fonsil,
button fonsil,
                                      8,2, "ADD WINDOW fonsil 3 1"
                                                     "ADD WINDOW fonsi2 3 1"
SCREEN viewshocklistscreen (
    title "VIEW CHECKLIST"
window weeklist, 2,1
     window wachklist, 2,1
window majorantion4, 18,1
```

```
scheme probotatsureen (
title "mavibonement Assessment Status"
      Reinscr
                N YES
      border
                  TRE
                                 3,1
7,1
      window
                  asenemoon,
      window
                  probetat,
                  chgassess, 16,1
majorection, 16,1
      window
      window
-EED OF AGAI. SOF
  -INCLUDE STATEMENT FOR THE ASAN typedef DEFINITIONS REMOVED TO
          COMPILE THURS.C MITEOUT INCUMING THE WATE OF THE COMPILER
  INCLOSE ASSETTED.
  DECLUDE ASAN . R
  - DECLARATIONS IN NON-LEXICAL OBJECT ENGINEER.....
  - Multiple Choice Space
  VARIABLE suldatoo (
     foundin "VARCHERSO deplanit[0].arr"
type STRIEG
format 4-30e
  DATOM muldatoo (
    num_columns 32
variable muldat00, 0, 2
pickable mo
 VARIABLE muldet01 (
    foundin "VARCHARIO deplemit[1].err"
    type STAIRS
format 4-30s
 DATOM muldet01 {
    Bun columns 32
    variable muldat01, 0, 2
pickable 200
 VARIABLE muldat02 (
    foundin "VARCHAR30 deplamit[2].arr"
type STRING
formet 4-30s
DATOM muldet02 (
    BUR FOUR 2
    am columns 32
   variable muldat02, 0, 2
pickeble mo
VARIABLE muldatos (
   foundin "VARCHAR30 deplumit[3] .arr"
   type STRING
formet 4-30s
DATOM muldatos (
```

```
num rows 1
num_columns 32
variable muldst03, 0, 2
pickable 20
  VARIABLE muldet04 {
foundin "VARCHAB30 deplemit[4].arr"
type string
foundt 4-30g
  DAFTM smldst04 (
      num columns 32
     variable muldat04, 0, 2
pickable 20
  VARIABLE muldet05 (
      foundin "VARCHARJO deplmult[5].arr"
type string
foundt 4-30s
  DATOM muldat05 (
     ava_rows 1
     num columns 32
variable zmldst05, 0, 2
pickable 200
  VARIABLE muldetos (
     foundin "VARCHARIO deploratt[6].arr"
     type STRING
format 4-30s
 DATOM muldat06 {
     NUM COURS 1
NUM COLUMNS 32
Variable muldatos, 0, 2
pickable mo
 VARIABLE muldet07 {
    foundin "VARCHAR30 deplumit[7].arr"
type STRING
format 4-30s
 DATUM muldet07 (
    num columns 32
variable muldet07, 0, 2
pickable mo
 VARIABLE muldetos (
    foundin "VARCEAR30 deplantt [8] .arr"
    type STRING
format 4-30s
DATOM maldet00 (
    ama rows 1
ama columns 32
    variable muldatos, 0, 2
pickable 20
VARIABLE muldatos {
   foundin "VARCHAR30 deplault[9].arr"
type STRING
format 4-30s
   3
DATOM muldatos (
   awa_rows 1
   aus columns 32
   variable muldet09, 0, 2
pickeble BO
```

```
)
 DAFOM muldet10 (
     num_rows 1
     Bus columns 32
    variable muldat10, 6, 2
pickable NO
 VARIABLE muldet11 {
    foundia "VARCEARSO deplemit[11].arr"
    type STRING
format 4-30s
 DAFOM maldatii (
    num rows 1
num columns 32
variable muldet11, 0, 2
pickable mo
 VARIABLE muldat12 {
    foundin "VARCHARIO deplault[12].arr"
    type STRING
format 4-30s
 DATOM muldet12 {
    BER TOWN 1
    BUR Columns 32
    variable muldat12, 0, 2
pickable 20
 VARIABLE muldet13 {
    foundin "VARCHAR30 deplmult[13].arr"
type STRING
formet 4-30s
DATUM muldatil (
   num rows 1
num columns 32
variable muldet13, 0, 2
pickable 80
VARIABLE muldet14 {
    foundin "VARCEAR30 depletit[14] .arr"
   type STRING
format 4-10s
DAFOM muldet14 (
   num rows 1
num columns 32
variable muldet14, 0, 2
pickable E0
VARIABLE muldet15 (
   foundin "VARCHARSO deplault[15].arr"
type STRING
formet 4-30s
DATOM muldet15 {
   num_rows 1
   num columns 32
   variable muldat15, 0, 2
pickable 200
VARIABLE muldet16 {
  foundin "VARCHARSO deplault [16] .err"
```

```
type smills
 DATOM muldet16 (
     num ross 1
num columns 32
     variable muldet16, 0, 2
pickable 20
 VARIABLE suldet17 (
     foundin "VARCHARSO deplmult[17].err"
type syring
format 4-30s
 DATES muldet17 {
    num columns 32
    variable meldati7, 0, 2
pickable NO
 VARIABLE soldet18 {
     foundin "VARCHAR30 deplosit[16].arr"
     type STRING
format 4-30s
 DATUM maldet10 (
    num_columns 32
variable muldat18, 0, 2
pickable 20
 VARIABLE muldet19 (
   foundin "VARCHAR30 depimult[19].arr"
type STRING
format 4-30s
DATOM maldet19 (
    num rows 1
    aus_columns 32
    variable muldatis, 0, 2
pickable BO
~ Planner attributes
VARIABLE plearner {
   foundin "VARCHAR planmem.arr"
   type FIRING format 4-30s
DATOM plantam {
   Bun rows 1
   aum columns 50
   variable planmam, 0, 20
leader "Your name, please:"
helpfile help/username.hlp
VARIABLE password (
  type STRING
format 4-10s
DATOM password {
   BUR POWS 1
   num_oolumns 55
variable password, 0 , 23
leader "Flease enter password:"
helpfile help/password.hlp
- Other General Storage for Varification, Tests, Etc.
```

....

```
VARIABLE nountries {
foundin "VARCHAR niby.nr"
         foundin
          type
format
                              579 TISS
                               4-20g
  - Moise Source Attributes
  VARIABLE sreid {
      foundin "VARCHAR sreid.arr"
type STRING
formet 4-9s
 DATOM mirama {
num_rows 1
num_columns 60
      variable sraid, 0, 21
leader "Reme of current MFR:"
pickable 20
  VARIABLE srodece (
      foundin "VARCHAR studess.arr"
      type STRING
format 4-54s
 DATOM srode (
          BUR POWS
          num columns 76
Variable srodesc, 0, 22
Leader Description:
          leader "Description:
helpfile help/mtrdesc.hlp
        I mirdes ,
aum rows 1
aum columns 70
variable srodes 0, 7
"Note: "
 DATEM strdess (
 VARIABLE schedule {
foundin "VARCHAR srosched.arr"
type string
formet 4-50s
DATEM schedule (
       awa_rows 1
awa_columns 73
variable schedule, 0, 22
leader "Scheduling activity: "
helpfile help/schdmtr.hlp
VARIABLE srootig {
foundin "VARCHER srootig.arr"
type STRIES
formet 4-50s
DATOM originar (
num_rows 1
num_columns 73
    variable sroorig, 0, 22
leader "Originating activity:"
helpfile help/origatr.hlp
- MTR Attributes
```

. ------

```
VARIABLE Gurartos (
                                                           - CURRENT Set
      foundin "VARCEAR ourartos.arr"
      type STRING
format 43s
  DATOM ourertoo {
        HER FOUR
          aum_columns
                         27
          variable
                          curartos, 0,16
          looder
                          "ARTCC:
         belpfile
                       help/ourartee.hlp
 VARIABLE curvidright (
type DFFFCER
formet $24
  DATOM ourvidright (
        ava columns 25
         variable curvidright, 0,16
loader Width (right): *
helpfile help/curvidrt.hlp
 VARIABLE curvidleft (
type INTROCE
formet $2d
 DATOM ourwidleft (
       aun_rows 1
aun_columns 25
variable curvidleft, 0,16
"Ridth (laft): "
        helpfile help/curwidif.hlp
 VARIABLE ourhigheit (
     foundin "ALTEFEC surhighalt.spec"
     type smi
                  STRING
DATOM carkighalt {
    aum rows 1
    aum columns 27
        variable curhighalt, 0,16
leader "Bigh altitude: "
        helpfile help/curhialt.hlp
 VARIABLE ourlowelt (
      foundin "ALTSPEC curlowalt.spec"
type STRING
formet 490
VARIABLE preartoc (
foundis "VARCHAR preartoc.arr"
type #TRIBG
format $3s
                                                      - PREVIOUS Set
   DATOM presites (
      AND TOWN 1

AND TOWN 1

AND TOWN 2

VARIABLE Presented, 0,4

pickable 20
VARIABLE providinght (
   formet 42d
DATOM prewidinght (
      num columns 9
       variable prewidinght, 0,4
```

```
pichable mo
  VARIABLE provident (
      type INTROME format 92d
   DATOM providleft (
         rows 1
ness columns 8
variable pickers
                            provident, 0,4
          pickable
  VARIABLE prehighelt (
      foundin "ALTEREC prehighelt.spod"
type STRING
format 49s
 DATOM prehighalt (

SEE rows 1

SEE rows 10

variable prehighalt, 0,1

pickable E0
 VARIABLE prelocalt (
foundin "ALTEREC prelocalt.spec"
type STRING
format $9s
 - Coordinates
 VARIABLE entlat (
foundin "COORDINATE ent.lat"
                                                            - CORREST OF ESTER Set
        type STRING
format 4-13s
 VARIABLE entloog (
foundin "COORDINATE ent.los"
type string
found %-13e
 VARIABLE shwist {
foundin "COORDINATE show.int"
                                                        - PREVIOUS or SHOW Bet
       type
format
                     STRING.
                      4-130
VARIABLE shwlong {
    foundin "COORDINATE show.lon"
    type STRING
    foundt 4-13s
 - Mavigation Foint Properties
VARIABLE CUTTISTYP (
                                                        - CURRENT or BETTER Set
      foundin "VARCHAR curfirtyp.arr"
type STRING
formet %12s-
VARIABLE carfindist (
      type Directal
VARIABLE curfixred {
                  IPTROER.
      type
       format
VARIABLE curfixed (
foundin "VARCHAR curfixed.arr"
```

```
STRIPS
           type
formet
    }
    VARIABLE cursavpt {
foundin "VARCEAR cursavpt.arr"
                             STR. DOG
           type
format
                               43a
    ŀ
    VARIABLE profixtyp {
   foundia "VARCEAR profixtyp.arr"
                                                                - PREVIOUS or DISPLAY Set.
           type
format
                        ST2.1103
                          $12g
    VARIABLE profindst (
                         INTEGER.
          type
format
   VARIABLE prefixred (
                    INTEGER
43d
   type
format
   VARIABLE premarpt {
    foundin "VARCHAR premarpt.arr"
                      STRING
          type
format
   - Aircraft Parameters
  VARIABLE somes {
foundin "VARCHAR so neme.arr"
type STRING
formet 4-12s
  DATOM accessed (
atta_rows 1
atta_rows 1
atta_rows 1
atta_rows 1
accessed 25
variable accesse, 0, 10
leader "Aircraft:"
pickable #0
  VARIABLE acressol (
      foundin "VARCHAR tid.arr"
type Braing
format 4-12s
 DATOM acmosal (
          num columns 35
         variable accemel, 0, 16
leader "Aircraft name:"
helpfile help/straircr.hlp
    }
  - Operations Specification
 VARIABLE day {
foundin "FRENTIONS ops[0].day"
type INTEGER
foundt 44d
                                                             - GENERIC OF JAMUARY
. )
 VARIABLE junday {
foundin "OFERATIONS ope[0].day"
type INTEGER
foundt +44
```

```
VARIABLE night {
    foundin "OPERATIONS ope[0].nite"
    type INTRACER
    formet %4d
                                  944
    VARIABLE jannite (
foundia "GFERAFICES ope [0] nite"
type DFFERER
formet 04d
    }
    VARIABLE febday (
foundin "OFERATIONS ope[1].day"
type IDTROUR
foundt t4d
    VARIABLE febaite (
foundin "OPERATIONS ope[1].nite"
type DIFFRANK
formet %4d
    }
   VARIABLE marday (
foundin "OPERATIONS ope[2].day"
type DEFENDER
formet ted
   VARIABLE marmite {
    foundin "OFERATIONS ope[2].nite"
    type INTEGER
    foundt *44d
   VARIABLE sprday (
foundix "OPERATIONS ope[3].day"
type INTEGER
foundt +4d
  VARIABLE apraite (
foundin "OPERATIONS ope[3].mite"
type INTROMA
format 84d
  }
  VARIABLE mayday {
foundin "GRERATIONS ops[4].day"
type INTRACER
formet 44d
 VARIABLE maynite (
foundia "OFFRATIONS ope [4].nite"
type INTEGER
formst 44d
 VARIABLE junday {
    foundin "OPERATIONS ope[5].day"
    type INTROGER
    format +444
 VARIABLE jumite (
foundin "OPERATIONS ops[5].mite*
type INTEGER
foundt 04d
VARIABLE julday {
    foundin "OPERATIONS ope[6].day"
    type INTEGER
    foundt +44
VARIABLE julnito (
foundin "OPERATIONE ope [6].mite"
```

```
VARIABLE augday (
foundin "GPERATICES ope [7].day"
type DEFECER
formet 94d
   VARIABLE auguite (
foundin "OPERATIONS ope [7] .nite"
type INTEGER
formet 44d
    VARIABLE cepday (
foundin "OFERATIONS ope[6].day"
type INTEGER
format 44d
   VARIABLE separts {
    foundin "OFFRATIONS ope[8].nite"
    type Diffrage
    foundt $4d
   VARIABLE octnite (
          foundin "OFFRATIONS ope[9].nite"
type DFFRATIONS
formet 44d
  VARIABLE novday (
foundin "CPERATIONS ope [10].day"
type DETECT
formet 94d
  VARIABLE moveite (
foundin "OFERATIONS ops[10].nite"
type INTEGER
format 44d
 VARIABLE decday {
foundin "OPERATIONS ope[11].day"
type INTEGER
formet 446
 VARIABLE decnite (
foundin "OFERATIONS ops[11].nite"
type INTRACE
formet 44d
 - Missions
VARIABLE missons (
foundin "VARCHAR misslabl.arr"
    type syming
formet 4-7s
DATOM misammel (
      num_rows 1
num_columns 34
variable misamme, 0, 26
leader "Nume of current mission: "
pickable 20
VARIABLE nounishme {
```

```
foundia
                                                    "VARCUAR GIA . RET"
                  type
formst
                                                    OTRING
   DATON misman (
                num rous 1
                  variable
                                                  nomicamo, 0, 14
                                                  "Mission none:"
holp/missness.hlp
                  bolpfile
  THITLING select {
           "Right now you can type ? for help, <CREAL C to quit, or move the carsor")
  ENGINE INTOTAL ("VIEW GENERAL ENGINEERING ABOUT THE PROGRAM")
  THEFT.IME selectistric ("Select aircraft and mission for MER")
THEFT.IME modernmetrize ("Modify current MER")
   THEFATER obgatrixt ("Select macher MER")
  THEFTLINE next neverther ("Enter next nevigation point")
  TEXTLES Curpretit
   { "CURRIERT
                                       PREVIOUS
                                                                                                         CHICAGO
                                                                                                                                  PREVIOUS" }
   THE CHIPTOTAL
  THETLER canceletrist ("Cancel this MER data entry")
  TEXTLES savestrint ("Seve this MER")
  THITLIER showsorestrict ("Show more MIR names (if may)")
 TRIFFLUE recalistrict ("Recall one of the following MTRs:")
TRIFFLUE statementrick ("Start new MTR")
TRIFFLUE definementrick ("Enter route waypoints")
 TEXTLEMS actuat ("Aircraft:")
 TEXTLINE opsessorist ("Operations are sessonal")
THEFTLINE opsessort: {"Operations are seasonal"}
THEFTLINE opthrayth: {"Operations are even throughout year"}
THEFTLINE instrict
THEFTLINE dayalte {"Please enter day and night operations by month"}
THEFTLINE dayalte {"DAY HIGHT DAY HIGH DAY HIGHT DAY HIGHT
 TEXTLINE stnownistrt ("Start new mission")
 TEXTRLOCK introtat {
         num rows 14
          border YES
filename txtblk/intro.txt
BUTTON nanoament
      num_rows 1
num_columns 38
       textline envass, 0, 2
belpfile belp/assess.hip
 BOTTON chaptr (
       BUR TOWN
       ava columns
                                          35
       textline objectivit, 0, 2
helpfile help/selmir.hlp
      belpfile
BUTTON horsekeeping (
      RUE POUR
       am_columns 33
                               bousekp, 0, 2
      textline
      helpfile
                                      help/househp.hlp
BUTTON introtat (
      BUE FOWS
      num columns 56
      textline
                                      introtat, 0, 2
      helpfile help/introhel.hlp
```

```
BUTTON modernmetr (
     aum_rows 1
     aves columns 35
     textline modeumstrixt, 0, 2
helpfile help/mohelp.hlp
        - no help here ous this button doesn't do naything
 WINDOW password {
      num columns 60
                    pessword. 0. B
 TRUTLDES tititat
  ("Developed for Soise and Sonic Boom Impact Technology Progrem")
 TEXTLEME tit2txt ("under U.S. Air Force Contract F33615-86-C-0530")
 TEXTLINE tithtat ("by how Laboratories, Inc.")
 THUTLINE titétat ("February, 1980")
 ("Unreleased demonstration of Prototype Version... Not for demoral Use")
 TRITLINE diafo ("Done viewing general information on ASAH")
 SUFFOR diafo (
     BEE FORD
     aus columns 76
     textline diafo, 0, 2
 WINDOW introduction (
     ama roos 15
     num_columns 78
textblook introtat,
                   introtat, 0, 1
diafo, 14, 1, "REMOVE WINDOW"
 WINDOW introvindow1 (
     RUE TOWN
                 21
     ama columns 70
     line
                   1, 0, 1, 77
     title
                    "ASSESSMENT SYSTEM FOR AIRCRAFT NOISE (ASAN) "
     textline
                   tititat, 2, 9
     toxtline
                   tit2txt, 3, 16
                   titStst, 4, 27
tit4tst, 5, 32
tit5tst, 7, 6
8,0, 9,77
     textline
     textline
     textline
     datem
                   plearnen, 12, 1,
                    "CALL VCAPITAL Splanman",
                   "ADD WINDOW password 15 3",
                   "UPDATE DATUM password",
                   "REMOVE WINDOW",
                   "CALL pwakeak"
 }
WINDOW introwindow2 {
    BUR POWE
     ama columns 78
    line
                   5, 0, 5, 77
    textline
                   selast,
                                  6, 3
    buttoe
                  introtxt, 7,13, "ADD WINDOW introduction 3 1" assessment, 8, 2, "CALL perposet" housekeeping, 0,44, "CALL perbhask"
    button
    button
SCREEN firstscreen (
titlescreen YES
   border
                 THE
                  "ASSESSMENT SYSTEM FOR AIRCRAFT MOISE (ASAM)"
                 introvindow1, 1,1
introvindow2, 13,1
   WLDdow
   window
morros opeasos (
   BUR POWS 3
   num columns 41
               opsessortut, 1, 3
```

```
border TES
helpfile help/whlops.hlp
     BUTTON opsteady (
        num columns 41
        textline opthrwyrtxt, 1, 3
border RMS
helpfile help/evenops.hlp
    SUTTON malbet00 {
    num_rows 1
    num_columns 1
    helpfile help/malbet.hlp
     BOTTON malbut01 {
       num columns 1
        helpfile help/mulbut.hlp
    DUTTOS malbato2 (
       aun columns 1
       helpfile help/mulbut.hlp
    BOTTON mulbut03 (
       ama ross 1
       num_columns 1
helpfile help/mulbut.hlp
    MOTTON mulbet04 (
      num columns 1
       belpfile help/mulbut.hlp
   BOTTON mulbut05 {
      num_rows 1
num_columns 1
helpfile help/nulbut.hlp
   MULTON malbatos (
      num rous 1
      helpfile help/mulbut.hlp
Borros malbut07 {
      num columns 1
      helpfile help/mulbut.hlp
   BUTTON melbetos (
      awa columns 1
      helpfile help/mulbet.hlp
   BOTTON mulbut09 {
     num_rows 1
num_columns 1
helpfile help/mulbut.hlp
  BOTTOS mulbet10 (
      BEE TOWN 1
      num columns 2
      helpfile help/mulbut.hlp
  normos mulbutil (
     Rum rows 1
num columns 2
belpfile help/nulbut.hlp
```

```
}
   EUTros mulbut12 {
     num rows 1
num columns 2
     helpfile help/mulbut.hlp
  BUTTON mulbet13 (
     ava ross 1
ava colvens 2
     helpfile help/mulbut.hlp
  BUTTON malbut14 (
     atm_rows 1
     num columns 2
     helpfile help/mulbet.hlp
  BOTTON mulbet15 (
     REE POURS 1
     awa columns 2
     helpfile help/mulbut.hip
  BOTTON malbet16 {
    num ross 1
     am columns 2
    helpfile help/mulbut.hlp
 SOFFOR mulbet17 (
aum_rows 1
num_columns 2
    helpfile help/malbet.hlp
 BUTTON mulbut10 {
    num_rows 1
aum_columns 2
helpfile help/mulbut.hlp
 SUFFOR mulbut19 {
    AUE POWS 1
    awa_columns 2
    helpfile help/mulbut.hlp
          Declarations for MTR DATA METRY SCREEN
BUTTON stammis {
    aum columns 40
     textline stnemistrt, 0,2
helpfile help/stnemis.hlp
     textlino
BULTON Solamis (
    num columns
                    40
     textline selecuistri, 0, 2
helpfile help/selecu.hlp
TEXTLES spectruistat ("Specify new mission")
NOTICE specimis (
    num_rous 1
num_columns 30
textline specumistrt, 0, 2
helpfile help/neumiss.hlp
NIMBOW Estreatery (
  num_rows 8
  button
  button chemit, 0, 2, "CALL pschemit"
button selacais, 2, 2, "CALL pentrais"
```

```
modernatr, 4, 2, "CALL dummy" specimenis, 6, 2, "ADD_WINDOW normism 13 3",
                                        "UPDATE DATUM missame",
"CALL MERCAMI Screen Window Datum Sutton",
"CALL stropy oldscreen Screen",
                                         "CALL pervaise old.err"
     )
                      78
     line
                      2,0, 2,77
                     stracm, 0, 2
mtrdesc, 1, 2
  WINDOW ELTER
                    cal {
                     3,0, 3,77
                     mtraes, 0, 2
mtraes, 1, 2
                      missemal,
             Declarations for DEFINE/MODIFY SCREEN (defnodstracreen)
 DATCM prelowalt (
aum rows 1
aum columns 10
      variable prelowalt, 0,1
pickable NO
 DATOM carlowalt (
      num columns 29
                       curlowalt, 0, 16
       variable
       looder
                       "Low altitude:
      belpfile
                     help/curloult.hlp
 DATOM profistype (
      BUR FORM
      REM columns 13
      variable
                      profixtyp, 0,0
      pickeble
DATOM curfixtype (
      num rows
                     24
      variable
                      curfixtyp, 0,11
"Fix type: "
help/curfixtp.hlp
      lesder
      holpfile
          Declarations for entering coordinates
DATOM entlong {
    num_rows 1
      aum_columns 25
Variable entlong, 0 ,11
leader "Longitude:"
     helpfile help/markenp.hlp
DATOM entlet (
     num ross 1
     num_columns 25
Variable extist, 0 ,11
leader "Letitude: "
     helpfile help/markmap.hlp
         Declarations for show coordinates
```

```
DATOM shwlet (
         num rous 1
num columns 14
variable shwlat, 0,0
pickable no
helpfile help/combnep.hlp
   DATOM shwlong (
         BUR POUR 1
         num_columns 14
variable shwlong, 0 ,0
pickable NO
         belpfile help/combusp.hlp
   DATOM profindist (
        RES LOSS
        Rum columns 6
variable prefindist, 0,4
pickable 20
   DATEM carfindist (
        NEE TOWN
        BUE COLUMNS
                      26
                        ourfindist, 0,16
         variable
        looder
                        "Fix distance: "
        balpfile
                        belp/curfirdi.hlp
  DATOM prefixred (
       BEE POWS
        num columns
                       profixred, 0,4
       pickable
  DATEM carfixred (
       BUR POWE
       num columns 26
       Variable
                      Carfirrad, 0,16
       helpfile
                     help/curfiers.hip
 DATOM profixed (
      aum_columns 10
Variable prefixed, 0,4
pickable 20
 DATON ourfixed (
      REEL POWS 1
       BEE COlumns
      veriable
                      curfirid, 0,16
      loader
                      "Fix ID:
      holpfile
                      halp/curfixed.hlp
DATOM preserpt (
     aum columns 10
variable presevpt, 0,4
pickable 20
DATOM GERNSVPt (
      PER TORR
      num columns
                   24
      variable
                     Gurnavpt, 0, 16
"Mav. Foint: "
help/Gurnavpt.hlp
      belpfile
DATOM BOWELTON (
     NEEL COLUMNS
                   40
      variable
                      notation, 0,7
```

```
halpfile
                        belp/atmtrm.hlp
BUTTON BESTERVPt (
     nen rous 1
      arm columns 35
textiine nextnavptxt, 0, 2
helpfile help/axtnav.hlp
THEFFILMS retained to ("Continue without selecting man",
THEFFILMS retained to the selecting man ("Continue without creating mission")
THEFFILMS retained ("Gootinue without selecting mission")
BUTTON retutrent (
   aus rous 1
    BUE COLUMN 40
    testline
                retnirectut, 0 ,2
belp/sessenir.hlp
    holpfile
MUTTOW retmirest1 (
   REEL TORK
    awa_oolume 40
                   retutremtut1, 0 , 2
    textline
   textline returnment x 1, 0 helpfile help/nomiss.hlp
BUTTON retaitreat2 (
   num columns 30
textline retxtreatxt2, 0 , 2
helpfile help/saveniss.hlp
SUFFOR retnomie (
   am rows 1
am columns 40
tartline retnomis, 0, 2
helpfile help/noneumis.hlp
WINDOW definedatr
       BUR FOWS
       awa oolwans
                        78
       textline
                       ourpretst,
                                        0, 16
       toxtline
                       carpretzt3,
                                        1, 16
       datum
                       cursavpt,
                                        2, 1, "CALL VCAPITAL &curacypt",
                                                  "MEHVALO"
       datus
                      pressypt,
                                        2, 26
                                        3, 1, "CALL VCAPITAL Courfixed".
       detun
                                                  "BEWVALE"
       datum
                       profixed,
       datum
                       cerfired.
                                        4, 1
       datus
                       prefizzed,
                                        4, 26
       datum
                       curfirdist.
                                        5. 1
                                        5, 26
                       profindist,
                                        2, 38, "CALL lat2dec sent",
                                                  "HENVALE"
       datum
                       shwlat,
                                        2, 64
       datum
                                        3, 38, "CALL loa2ded Sent",
                       estlong,
                                                  "MEGVALA"
                       shulong,
                                        3, 64
                                                 "CALL VCAPITAL tourfirtyp",
                       curfixtype,
                                        4, 30,
                                                  "MINVALG"
       dat wa
                       profixtype,
                                        4, 64
                       ourlowalt,
                                        7, 2,
                                                  "CALL altidec Sourlowalt",
                                                  "MENUTALE"
                      prelowalt,
                                        7, 26
                       ourhighalt,
                                        e, 2, "CALL alt2dec &curhighelt",
                                                  "MENVALE"
                      prehighalt,
                                       8, 26
                      curvidleft,
                                       9, 2
                      providleft,
                                       9, 27
                      curwidright, 10, 2
prowidright, 10, 27
```

. . . .

```
datum curartos,
                                            11, 2, "CALL VCAPITAL &CRITERIOS",
                                                            HEWVALD.
                                             11, 26
13, 2, "CALL astatrpt"
                             somtanvpt,
   SUFFOR conceints (
        om concense: {
    run rows 1
    run columns 35
    terrline cancelmatrixt, 0, 2
    helpfile help/concintr.hlp
  BUTTON seventr (
         sea rows 1
         num_columns 20
tentline savestrint, 0, 2
helpfile help/savestr.hlp
  WINDOW atractice (
          num columns 78
line 0,0,0,77
button saventr,
                     0,0, 0,77
saventr, 1, 2, "CALL saventr"
canceletr, 1,40, "CALL cancertr"
          button
  SCHEEN defendatracross (
        title
                     "DEFINE/MODIFY MER"
        window mirramoom, 2, 1
window definedsir, 6, 1
window mirraction, 20, 1
        border
                     Declarations for SELECT AMOTHER META SCRIPT
  BUTTON Shownorestr (
      num_rows 1
num_rows 17
tartline shouncementrixt, 0,2
helpfile help/sharmtrs.hlp
 BUTTON stnesstr (
       aum_columns 40
textline stacountrit, 0,2
helpfile help/startmir.hlp
 WINDOW normitree (
    aum rows 1
aum columns 40
datum necestrum, 0, 2
WIEDOW streenintr (
    MEN LOAD
                       stnowntr, 1, 2,
                       "ADD_WINDOW nountron 6 3",
                       "UPDATE DATUM novestrom",
                      "CALL penumera n2bv.arr"
showmorestr, 1, 41,
"CALL mebunch"
    textline
                      recellmirtmi, 3, 2
WINDOW curdet (
aum_rows 10
aum_columns 32
     detus mildetoo, o, o
     datum muldat01, 1, 0
     detum muldet02, 2, 0
     detum maldet03, 3, 0
     datum muldat04, 4, 0
    datum muldatos, 5, 0
datum muldatos, 6, 0
```

```
detum muldet07, 7, 0
       datum muldatos, s, o
       datum muldatos, s, o
  WINDOW cardet1 (
                    10
       BUE POWE
         m columns 32
       datum muldet10, 0, 0
       datum maldatil, 1, 0
              muldet12, 2, 0
       datus muldat13, 3, 0
       datum muldat14, 4, 0
       datum muldet15, 5, 0
       datum muldet16, 6, 0
       datum muldet17, 7, 0
       datum muldatio, 0, 0
       datum maldatis, 9, 0
 WINDOW cumtibut (
                    10
      num rows
      atta columns
      button mulbut00, 0, 0, "CALL MEROOMS deplouit[0].arr"
button mulbut01, 1, 0, "CALL MEROOMS deplouit[1].arr"
      button mulbut02, 2, 0, "CALL MTRooms deplanit[2].arr"
      button mulbut03, 3, 0, "CALL MIRCOOR deplanit[3].arr"
      button mulbut04, 4, 0, "CALL MTRooms deplant[4] arr"
      button mulbut05, 5, 0, "CALL MIROCOM deplanit[5].arr"
      button mulbut06, 6, 0, "CALL MFROORS deplan1t[6].arr"
button mulbut07, 7, 0, "CALL MFROORS deplan1t[7].arr"
button mulbut06, 8, 0, "CALL MFROORS deplan1t[6].arr"
      button mulbut09, 9, 0, "CALL MIROCOR depletit[9].arr"
           cummirbut1 {
                  12
      BWO TOWN
      aus columns
     button mulbut10,
                             0, 0, "CALL MIROSON deplault[10].arr"
                             1, 0, "CALL MEROORS deplault[13].srr"
2, 0, "CALL MEROORS deplault[13].srr"
3, 0, "CALL MEROORS deplault[13].srr"
4, 0, "CALL MEROORS deplault[14].srr"
     button mulbutil,
      button mulbut12,
      button mulbut13,
      button mulbut14,
      button mulbut15,
                             5, 0, "CALL MIROCON deplanit[15] arr"
      button mulbet16,
                             6, 0, "CALL MIROCON deplement [16] .arr"
                             7, 0, "CALL MIROOM deplanit[17].arr"
      button mulbut17,
                            8, 0, "CALL MIROCOM deplant[18] arr"
9, 0, "CALL MIROCOM deplant[19] arr"
     button mulbut10,
     button mulbut19,
 NIMBON retutrest (
     BUR FOUR 1
     aum columns 45
                 retatreat, 0, 1, "CALL melista",
                                        "CALL postront"
screen chyonestrearen (
      title
               "SELECT ABOTEER MTR"
      window miramoom, 2, 1
      window stressimtr, 5, 1
              cummirbut, 9, 3
cummirbut1, 9, 42
      window
      window
      Window curdet, 9, 5
Window curdet1, 9,44
      window retmirent, 20, 2
      border YES
                            Declarations for new mir name
DATUM datepubl (
     num rows 1
                      detepubl, 0, 22 "Data of publication: "
      variable
     London
     helpfile help/datepubl.hlp
BUTTOW definement {
```

```
num_rows 1
        tertline definestrut, 0 ,2
       helpfile help/getmap.hlp
 WINDOW defaunts
        ner cons
                         origatr,
                                    2, 1
4, 1
         datus
                         schodulo,
                        srods, 4, 1
datepubl, 6, 1
dafinestr, 0, 1,
         datus
         datus
                                                      "CALL equation
 SCHOOL mirdefinescroes (
       title
                  "MER DEFINITION"
                                 3,1
7,2
       WALTE
                   mtraesocs,
       wadow
                    defauntr,
       wandow
                   mtraction,
                                      20,1
                   7714
                     Declarations for MISSION RECUIREMENTS WINDOW
 VARIABLE ac in form (
       type
       format
                       42d
       lowlimit
                      1
       uplimit
default
 VARIABLE perstunt {
    foundia "VARCHAR pr_per_u.arr"
                     STRING
      type
                     4-6a
DATON perstuat (
aum rous 1
aum columns 10
                10
                   purstust, 0, 2
    variable
    leader
    trailer
    pickable
VARIABLE mistype {
type string
format t-is
DATOM mistypel (
      BEE POWG
                  mistype, 0, 14
"Mission type:"
help/mistype.hlp
      variable
      leader
helpfile
    M mistype (
aum_rows 1
aum_columns 10
vuriable mistype, 0, 14
"Mission type:"
DATOM mistype (
VARIABLE presities
                      "ALTEREC prelowalt.spec"
     foundin
     type
                     STR.DIG
DATOM prositiev (
    num rous 1
num columns 10
variable prealtley, 0, 0
```

```
pickable }
                     120
  VARIABLE curaltlev (
foundin "ALTEREC curlomait.spec"
       type
format
                     FRIE
                       490
  DATOM curalthey (
       ata rows
ata columns
variable
                     1
                    21
                     curaltlev, 0, 11
                    "Alt:
belp/eltmtr.hlp
       halpfilo
  VARIABLE as pre per {
type DOUBLE
format $12.31
                      DOUBLE
                      412.314
       lowlimit
                      0.0
       eplinit
                      4000.0
       default
                      100.0
 DATOM prepurset (
      And columns
                    12
                 sc_pre_pwr, 0, 0
      pickablo
 VARIABLE ac our pur
type no
formet 41
                     DOUBLE
                     410.315
      lowlimit
                     0.0
      uplimit
default
                     4000.0
                     100.0
   }
 DATOM curpurset (
     AUR rows 1
RWR columns 21
      veriable
                     sc_cur_per, 0, 11
      lander
      belpfile
                     help/purspec.hlp
 VARIABLE ad_pre_spd (
DATOM prospeed {
      num_columns
     variable as pre spd, 0, 0 trailer "Krs"
     pickable
Population ac der spd
   type
                   INTEG
   formet
lowlinit
                   43d
                  100
   uplimit
                  600
                  450
DATOM Gurspe
     aum rows 1
aum columns 21
variable ac
                   ad_our_spd, 0, 11
"Speed: "
"ETS"
     leadar
     trailer
    holpfile
                    help/mtrspeed.hlp
DATOM premavpt1 (
   num columns 3
                   pressypt, 0,0
```

```
piskable 190
 DATUS curnovpt1 (
      aus columns 21
      variable curnavpt, 0, 11
leader "Envpoint:"
helpfile help/navneme.hlp
      Tondor
      helpfile
 TEXTLINE canciparatet ("Cancel data entry for this mission")
 SOTTON casalpara (
      aum_columns 35
textline com
      BEST TORK
                      canciparatet, 0, 2
      belpfile belp/candistr.hlp
 THITLINE saveparetri ("Save this mission's data")
 BUTTON SEVERALE (
      BEE TOWN
      ave columns 30
      tartline
                      saveparatzt, 0, 2
     helpfile help/saveniss.hip
TRITLINE operdatatut ("Ready to enter operational data")
 BUTTON operdata (
    num rows 1
     textline operdatatxt, 0, 2
helpfile help/extrops.hlp
TEXTBLOCK SET (
    num rows 10
num columns 38
filenum txtblk/mtr.txt
TEXTLES Exclabeltat ("MAY FIX
                                              FIX TYPE
                                                             MIDTE"}
TEXTLINE STITE ("REFERENCE INFORMATION FOR DATA SHIPKY")
TEXTLINE CERPTETET1 ("CURRENT PREVIOUS")
TECTLINE ourpretzt2 ("----")
WINDOW opentry (
  Bun rous
                      10
   aum columns 78
 button operandy, 2, 19, "CALL penddops 1"
button openason, 7, 19, "CALL penddops 12"
WIRDOW fitpers (
      BUR FORE
                    17
      aua columns 70
      datus
                    mistype,
                                  0, 2
                    ecrame,
      datus
                                  1, 2
      textline
                    strixt,
                                  0,40
      textline
                    mtrlabeltzt, 2,38
                    outpretxt1, 3,14
outpretxt2, 4,14
outpatyt1, 5, 1, "CALL VCAFIZAL & outpatyt",
      textline
      detwa
      datum
                    pressypt1,
                                  5,25
7, 1
7,25
      datus
                    curspeed,
                    prespeed,
     detus
detus
     datum
                    propursat,
                                  9,22
      datum
                    pwrstunt,
                    perstunt, 10, 15
curaltlev, 12, 2, "CALL alt2dec &curlowalt",
                                  10, 15
                                         BEWVALE.
     detus
                    presitley,
     box
11ne
                    1, 37, 14, 77
                    3, 30, 3, 76
15, 0, 15, 77
```

```
nextnavpt, 14, 2, "CALL axtmispt"
operdata, 16, 2, "BRN SCREEN opentry"
cancipara, 16,40, "CALL canonis"
        betton
        bettoe
        toxthlook
                                    4,30
 SCHOOL MATERIA (
*FLIGHT PARLWATER MATERY*
2.1
                 stramora,
      window
                  fitpera,
      border
                  128
 SCREEN OPERATION DATA MITTAT FOR MITAT
      window
                 mtramoon,
                                3,1
      window
                  opentry,
      border
                Declarations for seasonal MFR and REQUIREMENTS
 DAFUM domite (
      BEB rows 1
      num_columns 6
      variable decmite, 0, v
      belpfile
   }
DARTON - deadey (
    DM decday (
num_rows 1
num_columns 10
variable decday, 0, 5
"DBC:"
"Aux "Mathday
     helpfile
                 help/methday.hlp
DARTOM moveite (
     REEL FOWS 1
     variable so
                  novaite, 0, 0
help/mathnite.hlp
    belpfile
DATUM noviny (
aum rows 1
aum columns
variable
                   10
                    novday, 0, 5
     leader
                 help/muthday.hlp
     helpfile
DATOM octnite (
    aua rous 1
     NUM Columns 6
     variable octnite, 0, 0
     belpfile
                    help/muthaite.hlp
DATOM octday {
     atta columns
                    octday, 0, 5
     veriable
     Londox
                belp/mathday.hlp
     belpfile
DATOM sepaite (
    num rows 1
     BUR Columns 6
    variable sepuite, 0, 0
help/mathnite.hlp
DATOM sepday (
     num columns 10
     variable sepday, 0, 5
leader *sep:*
    helpfile
                   help/mathday.hlp
```

*

```
DATOM augnite (
       BER rows 1
       am columns
                      augmite, 0, 0
       helpfile
                     help/mathaite.hlp
  DATEM augday {
       num columns
                     auguay, 0, 8
       leeder
       bolpfile
                     belp/mthday.hlp
  DATOM julnite (
      num ross 1
num columns
variable
                    6
                     julaite, 0, 0
      bolpfile
                     help/mathuite.hlp
    3
 DATOM julday (
      num rows 1
                    10
                    julday, 0, 5
      variable
      leader
     helpfile
                    help/mathday.hlp
 DATOM jumnite (
      num columns
                    junnite, 0, 0
help/mmthmite.hlp
      veriable
      helpfile
 DATEM junday (
      num columns 10
      variable
                   junday, 0, 5
"JUE:"
help/mathday.hlp
      looder
      helpfile
 DATOM maynite (
     num rows 1
      variable maynite, 0, 0 helpfile help/anthnite.hlp
    DATOM mayday (
                help/mathday.hlp
DATEM apraite (
aum rows 1
aum columns 6
                  apraite, 0, 0
help/mathaite.hlp
     variable
     helpfile
DATOM aprday (
ann rows 1
ann columns 10
                aprday, 0, 5
     variable
     looder
               help/mathday.hlp
     helpfile
  }
DATOM marnite (
     awa_rows 1
     Aus columns
                  •
    variable
helpfile
                  marmite, 0, 0
                  help/mathaite.hlp
DATOM marday {
```

....

```
amm columns
                      manday, 0, 5
      variable
      holpfile
                      help/mathday.hlp
DASTOM febalte {
     awa_rows 1
awa_colwans
variable
                      febaite, 0, 0
      belpfile
                       help/methnite.hlp
DATOM febday (
      num rows 1
      amm columns
                     10
      variable
leeder
                      febday, 0, 5
     bolpfile
                      help/mathday.hlp
DATEM jannite {
    sum rows 1
    num columns
      veriable
                      januite, 0, 0
help/mathaite.hlp
     bolpfile
DATOM janday (
num_rows 1
num_columns
                      10
      variable
                      janday, 0, 5
      loader
      belpfile
                     help/mathday.hlp
WINDOW month (
    OW month (
num_rows 14
num_columns 77
taxtline instribut, 1, 1
taxtline dayaita, 3, 0
      datum jamday,
datum jammite,
                           4, 12
      datus febday,
      detus febuite,
                            5, 12
      datum marday,
                            6, 1
      detum mermite,
                            6.12
      detum aprday,
                            4.20
             apraito,
                            4,31
      detum mayday,
      datum maymite,
datum jumday,
datum jummite,
                            5,31
                            6,20
                            6.31
             julday,
                            4,39
      detun
             juluito,
                            4,50
      datum augday,
datum augmite,
                            5,39
                            5.30
      detum sepaito,
detum sepaito,
detum octday,
                            6,39
                            6,50
                            4,50
      datos
             octaite,
      datum novday,
                            5,50
      datum movaite,
datum dendey,
                            5, 69
                            6.50
      detum decmite,
                            6,60
      button savepara, 13, 2, "CALL savenis"
     button cancipara, 13,40, "CALL concess"
     Declarations for new SHLECT AIRCRAFT AND MISSION FOR MER
TRATLER shemoremistri ("Show more mission names (if any)")
BUTTON shanorenis (
     BUR FORM
                       1
     aum columns
                      30
                       shumoremistrt, 0, 2
     helpfile
                       help/sharmiss.hlp
```

ses rows 1

```
TREFFLINE receimis ("Receil one of the following missions")
  WINDOW normican (
     num columns
                   40
                   misnas.
                             0. 2
  BINDON curnies (
      aum columns
                  78
                   . مند
                           1, 2, "ADD WINDOW normisms 7 3",
                                 "UPDATE DATUM BISBERG",
                                 "CALL penumies old.arr"
     button shumoremis, 1, 40, "CALL sabunch"
     taxtline recelmis, 3, 2
      datum muldatoo,
                           4. 4
      detum muldat01,
      datum muldat02,
      detum muldet03,
      detum muldet04,
     datus muldatos.
                          9, 4
      datum maldatos,
                          10, 4
     detum maldet07,
                          11, 4
     datum
           muldet08
                          12, 4
     datum muldatos,
                          13. 4
     datum maldet10.
                          4.42
      datum maldatii,
                          5.42
      datum muldat12,
                          6, 42
     datus
           muldat13,
                          7,42
     datum muldat14,
                          0,42
     datum maldat15,
                          9,42
     datum maldet16
                          10,42
     datum maldet17,
                          11.42
     datum muldatio,
                          12,42
     datum muldet19
                          13,42
     button mulbut00.
                          4, 2, "CALL MISCORE depleult[0].arr"
     button malbut01.
                          5, 2, "CALL MISconn deplumit[1].arr"
     button
            mulbut02,
                          6, 2, "CALL MISCORN deplemit[2].arr"
                          7, 2, "CALL MISSONN deplmult[3].arr"
     button
            mulbat03,
     button
            mulbut04,
                          8, 2, "CALL MISCONN deplault [4] arr"
     button
            malbut05,
                          9, 2, "CALL MISCONN deplault[5] .arr"
     button
            mulbut06.
                         10,2, "CALL MISCOON deplault[6].arr"
     button
            malbut07.
                        11, 2, "CALL MISCORE deplault [7] .arr"
     button
            mulbut00,
                        12, 2, "CALL MISCORN deplanit[8] .arr
     button
            mulbut09,
                        13, 2, "CALL MISCORN depleult[9].arr"
                         4, 40, "CALL MISconn deplemit[10].arr
     button
            mulbut10,
     button mulbutil,
                         5,40, "CALL MISconn deplanit [11] .arr"
     button mulbut12,
                         6,40, "CALL MISCONN deplumit [12] .arr"
     button mulbut13.
                         7,40, "CALL MISCORE deplett[13] .azz"
     button mulbut14,
                         8,40, "CALL MISconn deplant[14].arr"
     button
           mulbut15,
                         9,40, "CALL MISCORN deplement [15] .arr"
                         10,40, "CALL MISCOON deplouit [16] .arr"
    button
            mulbut16,
    button mulbut17,
                        11,40, "CALL MISCONN deplant[17].arr"
    button mulbut18,
                        12,40, "CML MISCORN deplant[18] arr"
                        13,40, "CALL MISCORN deplemit[19].arr"
15, 2, "CALL seliste",
    button malbut19,
    button retnomis,
                               "CALL NEW SCREEN oldsgrace."
TEXT DE selmisstat ("Select mission")
BUTTON soluiss (
     BEE POWS
     ama columns
                    30
     textline
                    selmisstat, 0, 2
     helpfile
                   belp/selniss.hlp
THEFAUTE fitperinftst ("Specify flight persector information")
BOTTOM fitperiaf (
     BUS FOUR
     AUM COLUMNS
                   37
     textline
                   fitperinftxt, 0, 2
     helpfile
                   help/fitperes.hip
WINDOW selection (
                       15
    BUR FOWS
    awa columns
                       77
                       1,1, "CALL vfyscatz tid.arr"
```

```
button selmins, 3,2, "CALL penhymis"
button filtparinf, 5,2, "CALL pentrfilt"
      button retutrent1, 13,2, "CALL communis"
scheme spentrais (
title "SKL
                  "SELECT AIRCRAFT AND MISSION FOR MER"
                ntramocal, 3,1
solacniss, 7,1
yes
      window
      waladow
scrimer chemic {
    title "smilet Alectaff and Mission for Mfs."
      window mtrnsmoom1, 2,1
               cumiss, 6,1
      window
      border
        Declarations for Day-Hight window
DATOM alght (
      NEE POWS
      aum columns 16
      voriable
                     might, 0, 6
                      "Hight:"
      leader
      belpfile
                   belp/miteops.hlp
DATOM day (
aum_rows 1
aum_columns 16
      variable day, 0, 6
leader "Day:"
      belpfile
                   help/dayops.hlp
WINDOW daymite (
  ava rous 12
ava columns 77
datum acume,
                              1. 1
      textline instricts, 3, 1
     datum day, 5, 2
datum night, 5,15
button savepara, 10, 2, "CALL expusope",
"CALL savenis"
      button canalpara, 10,40, "CALL canonis"
border YAS
          Declarations for mission specification window
DATOM sortio (
     num rows 1
num_columns 37
variable ac is form, 0, 35
leader "Emmber of aircraft is formation: "
helpfile help/numform.hlp
VARIABLE misdoss {
   foundin "VARCEAR misdesc.arr"
                                            -this description is for mission
   type STRING
format 4-60s
DATOM misdosci (
   num ross 1
   variable misdesc, 0, 7
lander "Descr:"
pickable NO
DATUM misdesc (
   num roup
   num rows 1
num columns 76
   variable misdess, 0, 14
```

```
"Description:"
      belpfile belp/misdess.hlp
  WINDOW stracnocal (
      BUR POWS
                   3 78
      num columns
      1120
                       2,0, 2,77
                     misnomol, 0, 2
misdosol, 1, 2
  WINDOW misspec (
     BEE TORS
                               16
                             77
      aum columns
      datus misdosc,
     datus misdeer, 1,1
datus mistypel, 3,2
datus sortia, 5,2
buttos returnent1, 14,2, "CALL HEW_SCHEEN oldscreen"
buttos returnent2, 14,47, "CALL entermis"
   3
 SCHOOL MISSION SPECIFICATION FOR AN MEN-
       vindow minmoon3, 3,1
window minmoon3, 6,1
border THE
  ~01-14-99 st will try to fix this file so it wil be only for assessments ~01-14-98 st changes will be commented with date
  -01-16-88 st change title on first screen, change lat. long. format lon
  - map control
-01-17-88 st con't to fix sdf file commented with 1-17-88
  - DECLARATIONS FOR SCHOOL SHADER
 VARIABLE assesses {
foundin "ASANTEADR ASSESSMENT.neme"
     type STRING
format 4-30s
 DATOM assessme (
     num rows 1
num columns 50
     variable assessment asse: "
pickeble 20
 DATOM mescamel {
     aum columns 75
     variable assessme, 0 , 30 leader "Hame of current assessment: "
     pickable 100
 VARIABLE comment (
     foundle "ASABURADE ASSESSMENT dosg"
     type STRING
formet 4-66s
DATES comment (
   num rows 1
num columns 76
     variable comment, 0 , 10 leader "Comment: "
    pickable BO
VARIABLE Guimepten (
type STRING
   format 4-30s
DATCH curnapnes {
```

```
aum_columns 77
variable curreparm, 0 , 19
                     "Current map name:
       londor
  WINDOW 14a (
      ava rowd 1
ava columns 78
line 0,
                      0, 0, 0,77
  WINDOW GRONDS
      num rous
num columns
datum
datum
                       78
                   assemmel, 0,1
comment, 1, 2
2, 0, 2,77
  WINDOW assument (
      BER PORE
                     comment, 1, 1
                     ourmepone, 2, 1
3, 0, 3,77
     Declarations for buttons used in majoraction footer
  TRUTLING probetatit ( "REVIEW CURRENT ASSESSMENT STATUS" )
  DUTTON probetat (
      num_columns 35
textline probetatxt, 0, 2
helpfile help/probetat.hlp
 TEXTLES probetatat2 ( "REVIEW ASSESSMENT STATUS" )
 MUTTOW probetat2 (
     num_rows 16
tartline probetatrt2, 0, 2
halpfile halp/revetst.hlp
 TEXTLES probdef ("ADD INFORMATION TO CURRENT ASSESSMENT" )
 BUTTOW probdef (
     num columns 39
     textline probdef, 0, 2
helpfile help/probdef.hlp
 TEXTLINE probdef1 ("ADD TO ASSESSMENT DEFINITION" )
 BUTTON probdef1 {
     num rows 1
num columns 31
    textline probdef1, 0, 2
helpfile help/probdef.hlp
TEXTLEME enclysis { "AMALYEE DATA" }
BUTTON analysis (
     ava columns 15
    textline analysis, 0, 2
helpfile help/dstanel.hlp
TEXTLEME reportgen ( "MAKE A REPORT" )
BOTTOM reportgen {
```

```
num columns 16
        textline
                    reportgen, 0, 2
        helpfile
                        help/reportgen.hlp
  TEXTLINE WORKLISTER ( "VIEW CHECKLIST FOR CURRENT ASSESSMENT" )
  BUTTON weakhlist (
       RUE TOWN
       num columns 42
                   weeklistat, 0, 2
       textline
       helpfile
                       help/viowlist.hlp
             Declarations for majoraction footers
  WINDOW majoraction (
                                       -header for problem status serv
      BUR FOW
                      78
       sem columns
       2120
                        0, 0, 0,77
       title
                         "Alternative actions you can now take:"
                        probdef, 2, 2, "MEN SCREEN probdefscreen" analysis, 2,56, "MEN SCREEN analysiscreen"
       button
                        analysis, 2,56, "MEW SCREET analysiscreen"
venhklist, 3, 2, "MEW SCREEN viewchecklistsore
reportges, 3,56, "CALL dummy2"
      button
      button
      button
  WINDOW majoraction1 {
                                     -header for problem definition screen
      BEE FOWS
      num columns 78
                    0, 0, 0,77
"Alternative actions you can now take:"
analysis, 2, 2, "HEN SCREEN analysiscreen"
probstat2, 2,40, "CALL peprobst"
      line
      title
      button
      button
      button
                      weaklist, 3, 2, "MEN SCREEN viewchecklistscreen"
      button
                     reportgen, 3,48, "CALL dummy2"
 WINDOW majoractical (
                                     -heeder for data analysis screen
      line 0,
                     0, 0, 0,77
                     "Alternative actions you can now take:"
probdef1, 2, 2, "MEN SCREEN probdefscreen"
      title
      button
                   reportgen, 2,47, "CALL dusmy2"
weaklist, 3,2, "HEW SCREEN viewed
probstat2, 3,47, "CALL peprobst"
      bettoe
      button
     button
  1
 WIMDOW majoractical { -- wheader for report generation screen
     RUM FOWS
      nem colu
                 ms 78
     1120
                     0, 0, 0,77
     title
                     "Alternative actions you can now take:"
                    wooklist, 2, 2, "MEM SCREEN viewchecklistscreen"
probetat2, 2,47, "CALL peprobet"
probdef1, 3, 2, "MEM SCREEN probdefscreen"
analysis, 3,47, "MEM SCREEN analysiscreen"
     button
     button
WINDOW majorastica4 {
                                   -header for view checklist screen
     BUR TOWN
     awa colum
                 20 78
     line
                    0, 0, 0,77
     title
                    "Alternative actions you can now take:"
                    probstat2, 2, 2, "CALL psprobst"
reportes, 2,47, "CALL dummy2"
probdef1, 3, 2, "HEW SCREEN probdefscreen"
analysis, 3,47, "HEW SCREEN analysiscreen"
     button
     button
     button
TEXTLIES loadglobel ("LOAD LOCAL DATA FOR OFFICEAL ACCESS")
BOTTOM loadglobel {
   num rows 1
num columns 39
   taxtline
                 loadglobal, 0, 2
help/loadglob.hlp
   helpfile
```

The second second second

```
NINDOW majorastica5 (
                                        -footer for database housekeeping sureen
          NE COLUMN 78
          1100
                  0, 0, 0,77
         title
         title "Alternative actions you can now take:"
betton loadglobal, 2, 2, "CALL dummy"
assessment, 3, 2, "CALL peprobet"
    SCHOOL MITTERY (
       title "MER DATA METRY"
       window miramoon, 3,1
window miramoon, 7,1
window majoranting, 7,1
window majoranting, 18,1
border MES
                       Declarations for problem status screen
   VARIABLE startdate {
        foundin "VARCHAR startdate.arr"
       type STRING
format 4-21s
   DATOM startdate (
        aum columns 40
       variable startdate, 0 ,15 leader "Date started: " pickable 20
   VARIABLE lastdate (
       foundin "VARCHAR lastdate.arr"
type STAIRS
format 4-21s
       M lastdate {
aum rows 1
aum columns 55
veriable lastdate, 0 , 28
"Data of last modification: "
  DATOM lastdate (
   pickable mo
  VARIABLE plantlast (
     foundin "VARCHAR plantist.arr"
type STRING
foundt 4-30s
 DAFOM plearlest {
      PAR LOAD
      num columns 55
     variable plantlast, 0 ,19
leadar "Last modified by: "
pickable mo
 WIRDOW probetat (
      DOM TOWN
      Bus columns 78
      datus
                    startdate, 0, 2
lastdate, 2, 2
planriast, 4, 2
      datus
THITLINE charactet ("Work on a different assessment")
 BUTTOS chapses (
     AND COLUMN 70
    WINDOW chgassess (
```

-change to different assessment

```
aus column
                     chques, 0, 2, "CALL pschques"
             Declarations for ENVIRONMENTAL ASSESSMENT DEFINITION SCREEN
   TEXTLEM modecatat ("Nork with MOA information (number or type of mirareft, missions, etc.)")
  BUTTON modmon (
      BES_columns 76
      textline modeostrt, 0 ,2
helpfile help/moswork.hlp
  TRATELER modeletizt ("Nork with MER information (number or type of aircraft, missions, etc.)")
  MUTTON modestr (
      BUR FOWS
      num columns 76
      tertline modetrixt, 0 ,2
helpfile help/streork.hlp
  TRATLINE modesptxt ("Work with map information (designate land uses, update maps)")
  BUTTON BOCKED {
      num columns 76
      tertline modmaptrt, 0 ,2
helpfile help/mapwork.hlp
 TENTLINE selectrit ("Actions you can now take to add information to this assessment:")
  WINDOW selection (
      AUS FOUR
      aum columns 77
      testline
                selectit, 0, 1
                  modmap, 2, 1, "CALL dummy2"
modmir, 4, 1, "CALL pentrent"
modmon, 6, 1, "CALL dummy"
      buttos
     betton
     button
 SCREEN probdefscreen (
     vindow selection, 7, 2
window majoractioni, 18, 1
    border YES
          Declaration for entering coordinates window
TEXTLINE entupplf
   {"Enter upper-left corner coordinates of area of current interest"}
TEXTLEMS entloyet
   {"Enter lower right corner coordinates of area of current interest"}
DATOM shwlat2 (
      BUR FORE
      aum columns
                     25
     variable shwist, 0 ,11
Leader "Letitude: "
helpfile help/ocubmap.hlp
DATOM shwlong2 (
     num columns
                    25
      variable shwlong, 0 ,12
leader "Longitude: "
     leader
     helpfile help/combmap.hlp
WINDOW extenor {
```

```
BUR COLUMN
                    70
      tortline
                    estupplf, 2, 2
                    estlat, 3, 1, "CALL lst2ded Sest", "HHWVALS" estlong, 3, 38, "CALL lon2ded Sest", "HHWVALS"
      detre
                                         "CALL lat2des Sent", "HEWVALS"
      datum
      textiine
                    entlowet, 5, 2
                    shwlat2, 6, 1, "CALL lat2ded &show", "MINVALS" shwloag2, 6, 38, "CALL loa2ded &show", "MINVALS"
      dates
      datus
            Declarations for DATA AMALTSIS SCREEN
 TEXTLINE geodetinquit ("Make geodets inquiries on map surees")
 BUTTOS geodeting (
     num rows 1
     num columns 74
     textline geodetingtxt, 0 ,2
     helpfile belp/geoing.hlp
 TEXTLER companisaftst ("Compare noise effects") -1-17-88
 SUTTON compacisef (
                                              ~1-17-00
     RUE FORE I
                                               ~1-17-00
     awa_columns 76
                                               -1-17-88
     tartline occapaciesfrrt, 0,2
helpfile help/compacie.hlp
~1-17-88
                                                    -1-17-88
 TENTRIM calmoisaftst ("Calculate noise offects in specified area")
 MUTTOW calcactsef (
     num_rows 1
     textline
     tartline calcacisaftri, 0,2
halpfile help/affcalc.hlp
TRITLIER calcucisemptat ("Calculate noise exposure in specified area")
 MUTTON calcactoarp (
     nun rows 1
     num columns 76
    textline calcacisexptxt, 0,2
helpfile help/expcalc.hlp
TRATELERS caloquicoktat ("Calculate quicklook (point) exposure estimate")
BUTTON calogklook (
    BUE POWS
    num columns 50
   textline oslogklooktxt, 0 ,2
helpfile help/quklook.hlp
TEXTLIEE entocortat ("Enter coordinates from keyboard")
BUTTON entecor (
    aum_rows 1
    num columns 40
   tartline entcoortst, 0 ,2
helpfile help/kbdntry.hlp
TEXTLIES usesspixt ("Use map surees")
    awa columns 30 textline
                                 usementut, 0 ,2
   helpfile help/usemap.hlp
TEXTLINE selectanatut ("Actions you can now take to analyze environmental assessment data:")
TEXTLEME defigeoerestat ("Specify a geographic area of interest:")
WINDOW detenaction (
   NUM rows 11
```

```
arm columns
                      70
       textline
                       selectemetri, 0, 2
       betton
                       onlogklook,
                                        2, 2, "CALL de
      button
                       calcacteap,
                                        3, 2, "CALL de
      button
                       calcocisef,
                                        4, 2, "CALL desay"
      button
                       compacisof,
                                        5, 2, "CALL des
                          odsting,
      button
       textline
                       defgeogreetzt, 8, 2
      button
                      memp,
                                        9, 2, "CALL downy2"
      button
                                        10,2, "ADD_WINDOW entecor S 1"
 SCREEN analysiscreen (
title "DATA MEALYSIS"
window assumnces, 2,1
window detanaction, 6,1
window majoraction2, 18, 1
border TES
 THATLINE showmoretat ("Show more assessments (if any)")
 source (
      num_rows 1
num_columns 17
tertline shoumoretxt, 0 ,2
helpfile help/getassmut.hlp
 TROTLING recallassizt ("Recall one of the following assessments:")
 TEXTLINE stnewsstat ("Start a new assessment")
 BUTTON STROWNS (
      num rows
                    28
       textline
                        stnewastxt, 0 ,2
      helpfile
                       help/newssmat.hlp
VARIABLE novement (
foundin "VARCHAR n2bv.arr"
      type
format
                  STRING.
                   4-300
DATOM NOVEGRAM (
     DER TORR
                       1
      Men colum
                       40
      variable
                       newsenem, 0,7
      leeder
      belpfile
                       help/stacuese.hlp
WINDOW MONROSEM (
      Bus Lone
      BUR COLUMNS
                       40
                       newscam, 0,1
WINDOW stnewers {
     DUE FOUR
     awa columns
                                 , 0, 2, "ADD WINDOW newsmann, 6 3", "UPDATE DATOM newsman",
                                 "CALL penwasen n2bv.arz"
                                               "CALL ubunch"
     button
WIEDOW receless {
     Bills Four
     aus columns
                   70
     textline
                      recellasstat, 0, 2
         curesbut (
ma_rows 10
ma_columns 2
      BUB_TOWS
       hum columns 2
button mulbut00, 0,0,
                                         "CALL ASAMoonn deplement[0].arr"
       button mulbut01, 1, 0,
button mulbut02, 2, 0,
button mulbut03, 3, 0,
                                        "CALL ASSMOORN depleult [1] .arr"
                                         "CALL ASSECTION deplouit[2].arr"
                                         "CALL ASAMoons deplemit[3].arr"
```

```
malbut04, 4, 0,
malbut05, 5, 0,
                                        "CALL ASABoom deplosit [4] .arr"
         button
         button
                                        "CALL ASAMooon deplement [5] .arr"
         button
                  malbut04,
                              6, 0,
                                        "CALL ASAMooan deplanit[6].arr"
         button
                  mulbut07, 7, 0,
mulbut08, 8, 0,
mulbut09, 9, 0,
                                        "CALL ASSMOOR depleuit [7] .arr"
                                        "CALL ASAHoosa deplault[9].err"
                                        "CALL ASMIGORE deplemit[9].arr"
 NIMBOW curssbut1 {
    sum rows 10
    sum columns 2
         num columns
                  malbut10, 0, 0,
                                       "CALL ASSESSED deplement [10] .err"
         button mulbut11, 1, 0,
                                        "CALL ASABoons deplault [11] . nex"
         button mulbut12, 2, 0,
                                        "CALL ASANCORS deplault [12] .arr"
                                        "CALL ASAMGOOM deplault[13].arr"
         button
                mulbet13, 3, 0,
         button malbut14, 4, 0,
                                        "CALL ASAMooan deplanat [14] .arr"
         button
                  mulbut15, 5, 0,
                                        "CALL ASAHoons deplault [15] .arr"
                                       "CALL ASAMoonn deplanit[16].arr"
"CALL ASAMoonn deplanit[17].arr"
        button mulbut16, 6, 0,
        button
                mulbut17, 7, 0,
                                        "CALL ASAMoonn deplanit [18] .arr"
        button mulbutis, s, o,
        button malbut19, 9, 0,
                                       "CALL ASAHooon deplosit[19].orr"
 TEXTLESE retness ("Continue without selecting assessment")
 SUFFOR retassent (
    BER TOWN
               1
    num columns 40
    textline
                retnoss, 0,2
    belpfile
                 help/nossess.hlp
 WINDOW retwees (
    num rows 1
                  rotossent, 0,1, "CALL misto", "CALL peprobet"
 screen abgouressarees (
      title
                 "SELECT ABOTEER ASSESSMENT"
      Window
                  assamoon, 2,1
      window
                  stromes.
                              6.1
      window
                  recalass,
                              8.1
      window
                  oursesbut, 9,3
      window
                  curesebut1, 9,42
      Window
                  ourdet,
                              9,5
      window
                  ourdat1,
                              9,44
      window
                  retwooss.
                              20,2
        Declarations for NEW ASSESSMENT DEFINITION
VARIABLE entdeed! (
     foundin "VARCHAR60 estdesc[0].srr"
     type smalls
               4-60g
DATOM estdeed! (
     num rows 1
num columns 75
     variable entdess1, 0,0
helpfile help/entdess.hip
VARIABLE estdeed? (
     foundin "VARCHAR60 entdesc[1].arr"
     type
                STRING.
              4-60s
DATOM catdesc2 {
    num_rows 1
num_columns 75
     variable entdesc2, 0,0
helpfile help/entdesc.hlp
VARIABLE entdess3 (
```

```
"VARCHAR60 ontdess[2].arr"
         foundin
                      STRING
         type
format
                      $-60a
  DAFOM entdesci (
        aum rows 1
aum columns 75
variable entdesd, 0,0
helpfile help/entdesd.hlp
  type STRING
  DATOM entdess4 {
       amm_rows 1
ham_columns 75
variable entdess4, 0,0
helpfile help/entdess.hlp
  TEXTLINE entdescript ("Please enter a brief description for this assessment")
  DATOM nommones (
       aum rose 1
aum columns 77
variable newseam, 0,35
        leader
                   "Reme of new assessment definition:"
      pickable 100
  WINDOW newsedeed (
       aum_rows 9
aum_columns 70
detum aows
       textline entdeedx, 3,4 datum entdeedx, 5,4 datum entdeedx, 6,4 datum entdeedx, 6,4 datum entdeedx, 7,4
       datus
datus
border
                    TES
             Declarations for database howsekeeping screen
 TRETLIER updateinfotzt ("Opdate information")
 BUTTON updatainfo (
      num rows 1
num columns 50
      textline updateinfotxt, 0 ,2
helpfile help/updatein.hlp
TEXTUINE asstabletat2 ("Frint list of all columns in an assessment's tables")
      num rows 1
      taxtline asstabletxt2, 0,2
helpfile belp/asstable.hlp
TRUTTLIBE asstabletzt1 ("Frint list of an assessment's tables")
BUTTOW esstable1 (
    atta_rous 1
                       50
     textiae asstabletxi1, 0,2
helpfile help/asstable.hip
TENTEDE assesstat ("Print list of all assessments")
BUTTON 255666 (
    num rows 1
```

```
aum columns
       textline acc
                      mestat. 0 .2
       helpfile help/mobelp.hlp
 TRITLINE dodntstrt ("Print all database dates")
           dodate (
 BUTTON
      aum rous 1
      num columns
      testiino
      helpfile help/dbdete.hlp
 TENTALIS dbheekpgtxt ("HAMING: Actions you take on this screen affect
                           ASAN'S permanent databases |*)
            Obsekpgactice
            BUE TOWN
                          13
            amm columns
                          70
           1120
                           0,0,
                                0,77
            toxt 14ma
                           dbheelpgtzt,
                          dodate,
           button
                                       4,2, "CALL de
                          B05000,
            button
                                         6,2, "CALL pratabe"
                          asstable1, 8,2, "CALL SUpropt 1" asstable2, 10,2, "CALL SUpropt 2"
           button
           button
           button
                          updeteinfo, 12,2, "CALL dumy"
       }
     ma opprejableases (
      title
                  "DATABASE ROUSEKERP DEG"
      window
                 dbhsekpgastica, 2,1
                 majorastica5, 10,1
 WINDOW quicknesbut (
        num rows
                       10
                      2
                 mulbut00,
                                       "CALL SUprint deplanat [0].arr"
                            0, 0,
                 mulbut01, 1, 0,
                                       "CALL SUprint deploratt[1].arr"
        button
        button
                malbut02, 2, 0,
                                       "CALL SUprint deplanit[2] .arr"
        button
                mulbut03, 3, 0,
                                       "CALL SOprist deplamit[3].arr"
        button
                mulbut04.
                            4. 0.
                                       "CALL SUprint deplanat[4].arr"
        betton
                 mulbut05, 5, 0,
                                       "CALL SUprist deplsalt[5].arr"
                                       "CALL SUprint deplanit[6].arr"
        button
                mulbutos, s, o,
        button
                mulbut07, 7, 0,
                                       "CALL SUprint deplanit[7].arr"
                malbut00, 0, 0,
malbut09, 9, 0,
        button
                                       "CALL SUprist deplanit[8].arr"
                                       "CALL SUprist deplault[9].arr"
WILEDON
         quicknesbut1 (
       BUR TOWN
                     10
        ave columns
                     2
       button mulbut10, 0, 0,
                                       "CALL SUprist deplett[10].arr"
        button
               mulbut11, 1, 0,
                                       "CALL SUprint deplacatt[11].arr"
        button
                 mulbut12, 2, 0,
                                       "CALL SUprint deplault[12].arr"
       betton
               mulbut13, 3, 0,
                                       "CALL SUprist deplsuit[13].arr"
        button
                 mulbut14,
                             4, 0,
                                       "CALL SUprint deplant[14] .arr"
       button
                 mulbut15, 5, 0,
                                       "CALL SUprist deplement[15].arr"
       button
                 mulbut16, 6, 0,
                                       "CALL SUprist deplett[16] .arr"
                malbut17, 7, 0,
       button
                                       "CALL SUprist deplanit[17].arr"
       button
               mulbut18, 8, 0,
mulbut19, 9, 0,
                                      "CALL SUprist deplet[18].arr"
"CALL SUprist deplet[19].arr"
       button
TRITILEE suscient ("Frint list of SUPERUSER's tables")
TRITILEE hquelent ("Frint list of ERADQUARTERS' tables")
          stselect (
     ama_rows 1
                   50
     awa columns
     textline suselect, 0 ,2
helpfile help/nohelp.hlp
    num hquan 1
ELPI-FORM
     textline hquelect, 0 ,2
helpfile help/nohelp.hlp
```

```
. HINDOW POCHOPER (
    BEE TOWS
                  retessent, 0,1, "CALL uliste", "MEM_SCREEN dbhsekpgsome
WINDOW Agrasoloct (
aum_rows 3
aum_columns 76
                 hquelect, 0,1, "CALL SUpropt 3"
suselect, 2,1, "CALL SUpropt 4"
   button
SCREEN sloassureen {
    title "SELECT ASSESSMENT FOR DATABASE PRINTOUT"
                  hquusalect, 4,1
reculase, 8,1
      window
      window
                  receless,
      window
                  quickessbut, 9,3
      window
                  quickssabut1, 9,42
                              9,5
      window
                  curdet,
      Window
                  cardet1,
                                9,44
      window
                              20,2
                  retuopra,
          Declarations for view CEBCK-LIST SCREEN
TEXTLINE otherchklet ("View another checklist")
 NOTICE otherchilst (
      BEE COLUMN
                     25
     textline
belpfile
                      otherchklet, 0, 2
                   help/othrohk.hlp
TENTELOCK foas12 (
     filenme
                      tstblk/fonsi2.tst
      DEED TOUG
                   10
     num columns
border
                     THE
WIEDOW foasi2 {
     num_rows
aum_columns
taxtblook
                      13
                    78
                      fons12, 0,1
                     otherchklet, 12,2, "RIDGOVE WINDOW"
TEXTRICOR foasil {
    filenesse txtblk/foasil.txt
    filename
num rows
                     10
     awa_oolwas
                     76
     border
                     YES
WINDOW fonsil {
     num_columns
textblock
                      fonsil, 0,1
                     otherchklet, 12,2, "REMOVE WINDOW"
     button
Filename txtblk/ceter3.txt
num_rows 10
num_columns 76
                     TES
```

```
HIMDOW caters {
     aum columns 78
tartblock co
                      catons, 0,1
                     otherchklet, 12,2, "RESOVE WINDOW"
FERTELOCK cetex2 {
filenese trtblk/cetex2.trt
     num columns
                     10
                     76
WINDOW cater2 (
     BASE LODG
                   70
     num columns
                      ostes2, 0,1
                     othershkist, 12,2, "RESOVE WINDOW"
THERMOOR ostori (
     filenome
                     trtblk/csterl.trt
     ME TOWS
                     10
                     76
      num columns
WINDOW context (
     num_columns
                   74
     textblock
                     cateri, 0,1
                     otherchklst, 12,2, "REMOVE_WINDOW"
TRETLINE fossittm {
"Show documentation necessary for finding of no significant impact"}
BUTTON fonsi2 {
    num rows 1
aum columns 72
     textline fonsi2txt, 0, 2
helpfile help/fonsi2.hlp
TREFLIER fonsiltat {
"Show MMPA bases for finding of me significant impact (FONSI)"}
BOTTOM foasil {
    num rous 1
     tertline fonsiltrt, 0, 2
helpfile help/fonsil.hlp
TRITLINE cataritat ("Show documentation meeded for categorical exclusions")
BUTTON Octors (
    aca rows 1
     aux columns
                    55
    tertline cotexitrt, 0, 2
helpfile help/cotexi.hlp
TEXTLEM cotes2tst (
"Show armsples of proposed actions qualifying for categorical analysions"}
MUTTON cates2 (
    aum_rows 1
aum_columns 74
textline catex2txt, 0, 2
helpfile help/catex2.hlp
TEXTLINE cateritat ("Show MEPA bases for categorical exclusions (CATER)")
BUTTOW octax1 {
   num rows 1
    textline cutexitxt, 0, 2
helpfile help/cutexi.hlp
```

```
WINDOW washist
                   cetari,
                                   2,2, "ADD_WINDOW cotex! 3 1"
                                   4,2, "ADD_WINDOW GREAK2 3 1"
6,2, "ADD_WINDOW GREAK3 3 1"
8,2, "ADD_WINDOW fonsil 3 1"
10,2, "ADD_WINDOW fonsil 3 1"
                   ester2,
                   netex3.
                   fonsil,
                  foos12,
SCRUMN viewchecklistscreen (
     title
                 "VIEW CERCETIST"
                 vechklist, 2,1
     window
                 majorantica4, 18,1
                 THE
  title
              "BIVIRONADITAL ASSESSMENT STATUS"
  Painggroom THE
  border
              THE
   Window
               assamona,
           probetat,
  wobatw
                               7,1
  wandow
               abgassess,
                            16,1
           majoractica, 18,1
```

A.3 Screen Description File for Report-Related Portions of ASAN

```
Declarations for REPORT GENERATION SCREEN
TEXTLES viewoisetzt ("View text on calculated noise affects for current assessment")
SUFFOR Viewnoisetz (
    aum ross 1
    num columns 72
    textline viewnoisetxt, 0,2
helpfile help/viewtext.hlp
TEXTLEM viewbplatetst ("View boilesplate")
BUTTON viewbplate (
    num columns 72
    textline viewplatetat, 0,2
helpfile help/rolodex.hlp
TEXTLINE pracisosoptit ("Frint above text with associated beilerplate")
BUTTOM pracisembp (
   sum columns 72
   taxtline prhoiseshptxt, 0 ,2
helpfile help/rolodez.hlp
TEXTLEM pracisetat ("Frint above text")
BUTTON precisetz (
    nua_columns 72
   textline pracisetxt, 0,2
helpfile help/creatxt.hlp
```

```
SUFFOR stdreprt (
     ana columns 72
    textline stdreprixt, 0,2
helpfile help/creetxt.hlp
TEXTLINE selectroptxt ("Actions you can now take to produce text and graphics:")
WIEDOW reportaction (
         aum rous 15
                        o 77

0, 1, 0, 76

selectreptxt, 4, 1

stdreprt, 6, 1, "CALL callrpt"

viewnoisetx, 8, 1, "CALL demay"
          1120
          tortlino
          button
          bettos
                       praoisetz, 10, 1, "CALL callrpt3"
praoisembp, 12, 1, "CALL callrpt4"
viembplete, 14,1, "MNH_SCREEN bplaterevscreen"
          button
          button
         button
 }
SCREEN reportgensureen (
title "MARE A REPORT"
nainsureen TES
     window reportaction, 2, 1
border TES
     border
       · Declarations for boilerplate review screen
THITLINE otherbplatetat ("View other boilerplate text")
BUTTON otherbplate (
     PER LONG
      num columns 30
textline otherbplatetxt, 0, 2
helpfile help/blrplate.hlp
THETHLOCK hearden (
fileneme blxplt/hringdag.bpl
num_rows 10
      num columns 76
border Yes
                        THE
WINDOW boardem (
    NW heards.

Aum_rows 13

Aum_columns 78

taxtbloak heardsm, 0,1

best of heardsm, 12,2, "REMOVE_WINDOW"
TEXTLINE heardestat ("Hearing demage risk")
BUTTON hearden (
     num_rows 1
num_rows 1
num_columns 35
textline heardematrt, 0, 2
helpfile help/birplate.hlp
TENTALOCK structden (
      filenese blrplt/strotdag.bpl
     num_columns 76
WINDOW structden (
     aum_columns 79
      textblock structden, 0,1
                      otherbplate, 12,2, "REMOVE WINDOW"
TENTLISE structdentxt ("Structural demage")
```

٠.

THEFLUM stdreprist ("Frist stendard report")

```
BUTTOS structdom (
       textline structdentrt, 0, 2
helpfile help/blrplete.hlp
  TECHNICE actistfer (
      filename birpit/sipintf.bpl
       num columns 76
      border
                      YHE
 WINDOW actintfer {
   aum rows 13
   aum columns 78
      textblock sctintfer, 0,1
      button
                   otherbplate, 12,2, "RESOVE WIRDOW"
 TEXTLEM actintfertxt ("Activity interference")
 BOTTON actintfer (
     num columns 35
      taxtline actintfertxt, 0, 2
helpfile help/blrplate.hlp
 fileseme blrplt/wildlife.bpl
aum_rows 10
aum_columns 76
border THS
TEXTLER wildlifetzt ("Wildlife")
 BUTTON wildlife (
     FEE LOAD
     aum_cotes 1
aum_columns 35
textilus wildlifetxt, 0, 2
belpfile help/birpists.hip
 TEXTBLOCK comintfor (
     filenme birpit/spahintf.bpl
num rows 10
num columns 76
border YES
TEXTLDEE comintfortat ("Communication interference")
BUTTON comintfor (
    aum rows 1
aum columns 35
textline comintfertxt, 0,
helpfile help/blrpinte.hlp
     BEE FOWS
                    comintfertat, 0, 2
TEXTBLOCK Livestock (
                 blrplt/livestok.bpl
     filenesse
     BEE LOAD
                    10
     num_columns 76
    border
                   THE
```

```
WINDOW Livestock
     SEE FORD
       aum columns 78
                    livestock, 0,1
otherbplate, 12,2, "NEMOVE_WINDOW"
       textblock
      botton
 THITLINE livestocktut ("Economic damage to livestock")
 BOTTON livestock (
      awa columns 35
      textline
                       livestocktat, 0, 2
      belpfile
                       help/blrplete.hlp
 TEXTRLOCK ennyace {
      filesmo
                       blrplt/canyace.bpl
                       10
      RWR Columns
                       76
                        THE
MINDOW amoy (
                      13
      ava columns 70
                                 0,1
                      annynce,
                      otherbplate, 12,2, "REMOVE WILDOW"
TEXTLINE amounts: {"Buses ensoymnes"}
BOTTON annoy (
     am columns
textline
                      35
                       annoytat, 0, 2
                     help/blrplate.hlp
      helpfile
TREFLIE bplatetxt ("Select one of the following to view available noise effects boilerplate:")
TEXTLIES returnpt ("Return to report selection screen")
DOFFCE returnpt (
   num ross 1
num columns 42
textline returnpt, 0, 2
helpfile help/nohelp.txt
WINDOW mulltast (
   aus columns 77
   button returnent, 1, 1, "MEM SCHEMM reportgensoreen"
WINDOW bplate {
     BURD FOWD
                    11
     aux oolumes
                    70
     line
                     0,0, 0,77
     textline
                     bplatetst, 2,2
     button
                     аввоу,
                                 4,2,
                                          "ADD_WINDOW annoy 3 1"
                     comintfor, 6,2,
     button
                                           "ADD WINDOW nomintfor 3 1"
"ADD WINDOW actintfor 3 1"
     button
                     sotistfer, 0,2,
                    heardem, 10,2, "ADD_WINDOW heardem 3 1"
livestock, 4,39, "ADD_WINDOW heardem 3 1"
wildlife, 6,39, "ADD_WINDOW wildlife 3 1"
structum, 8,39, "ADD_WINDOW structum 3 1"
     button
     buttoe
     button
     button
SCREEN bplaterevscreen (
     title
window
                 "VIEW BOILERPLATE TEXT"
                bplate, 2,1
nulltext, 18, 1
     window
     border
```

A.4 Screen Description File for Graphic Portion of ASAN

```
-INCLUDE STATEMENT FOR THE ASAN & GRAPHICS typodes DEFINITIONS NEEDED TO
        COMPILE USUNG C WITHOUT INCURRING THE WRATE OF THE COMPILER
INCLUDE ASSETTIVE . H
TECTATOR ASSET, R
 - DECLARATIONS IN MOS-LEXICAL ORJECT SEQUESCE .....
        Data structures for holding list of map names
VARIABLE dises[0] {
                STRING
                 4-00
  DATCH disem0 {
    num columns 0
variable dinem[0], 0, 0
pickable NO
VARIABLE dinem[1] {
  DATOM dlasmi (
    BUE TOWN
    Bum columns 8
    variable dinem[1], 0, 0
pickeble 80
VARIABLE dinom[2] (
    type
  DATUM dlama? {
    BEE TOWN
    num columns 8
    variable dinam[2], 0, 0
pickable NO
VARIABLE dlace [3] {
type states
 DATEM dineral {
   num columns S
   variable dlncm[3], 0, 0
pickable 20
VARIABLE dinem[4] {
    type
 DATOM dinom4 (
   BUR FOWS
   Dun columns 0
   variable dinem[4], 0, 0
pickable 20
VARIABLE diama[5] (
   type
               STRING
 DATEM dlams (
```

```
num columns &
variable dinam[5] , 0 , 0
pickable NO
 VARIABLE disem[6] {
      type STRING
format 4-0s
  num_rows 1
num_columns 8
variable dinum[6], 0, 0
piokable 200
}
   DATUM dlamas (
 VARIABLE diams[7] (
     type STRING
format 4-8s
   )
DATM disen? {
    sum_rows 1
    sum_columns 0
    variable disen[7], 0, 0
    pickable 20
VARIABLE dinem(8) {
type symins
formet $-8s
   DATEM dlams (
     num rows 1
num columns 6
    variable diama[8], 0, 0
pickable 20
DATOM dinoms (
    Aum rows 1
Aum columns 9
variable dinum[9], 0, 0
pickable 50
VARIABLE dinem[10] {
     type STRING
format 4-0s
   DATOM dinumio {
    num rows 1
aum columns 0
variable dinum[10], 0, 0
pickable NO
VARIABLE dlaces[11] (
     type systems format 4-8s
   DAFOM dlacali (
    num rows 1
num columns 9
variable dinum[11], 0, 0
pidkable 20
VARIABLE dlnom [12] {
     type STRING
formet 4-8s
  DATUM dinemia {
     num rows 1
  variable dinam[12], 0, 0
piokable EO
}
```

```
VARIABLE dlaca[13] {
                    872.132
4-8s
     DATEM dinemil (
      num_rose 1
num_columns 8
variable dinum[13], 0, 0
pickable E0
  VARIABLE dinem[14] {
       type STRING
                          4-00
    DATOM dlamm14 {
       num columns 8
      variable dlamm[14], 0, 0
pidkable 80
                Declaration for entering coordinates
 VARIABLE estlat {
foundia "COORDINATE est.lat"
type STRING
                                                                     - CORREST OF MITTER Set
         type STRIR
format 4-13s
 DATEM entist (
ann rows 1
ann columns 25
        variable entist, 0 ,11
leader "Letitude: "
helpfile help/combusp.hlp
 VARIABLE estlong {
foundia "COORDINATE est.lon"
type STRING
formet 4-13s
 }
DATOM catlong (
num rows 1
num columns 25
        variable entlong, 0 ,11
leader "Longitude:"
helpfile help/combmap.hlp
              Declaration for show coordinates
VARIABLE shwist {
foundin "COORDINATE show.lat"
type STRING
formet 4-13s
DAFOM shwlat (
      num rous 1
num columns 25
       num_columns ZB
variable shwist, 0 ,11
leader "Latitude: "
pickable NO
helpfile help/combmap.hlp
VARIABLE shwlong (
foundin "COOMDENTS show.lon"
type STRING
       type stains format 4-13s
}
DATUM shwlong (
RUM rows 1
RUM columns 25
```

```
variable shulcag, 0 ,11
leader "Longitude:"
     pickable 20
balpfile balp/combnep.hlp
VARIABLE shwdist (
     type DOUBLE
splinit 10000.
lowlinit 0.
format $10.21f
}
DATON shudist (
     amarone 1
amarone 1
amaroniums 13
variable shwdist, 0, 0
pickable 20
trailer "hm"
- DECLARATIONS FOR SCREEN HEADER
    foundin "ASARREADR ASSESSMENT. No.
    type STRIES
formet 4-30s
DATES assented (
     Bun columns 78
     variable assename, 0 , 30
     leader
                   "Name of ourrest assessment: "
    pickable
                  150
     helpfile
                 help/schelp.hlp
VARIABLE comment {
   foundin "ASAMBUADE ASSESSMENT.dedc"
    type STRING
format 4-66s
DATUS coment {
    num_rows 1
num_columns 77
variable comment, 0 , 10
pickable 20
WINDOW lin (
    THE POSS
    Num columns 78
WINDOW RESERVED
    BEE LOMB
                   70
    detus
                   assessmel, 0,0
                    2, 0, 2,77
   Declaration for buttons used in majoraction footer
TRICTLINE probets ( "REVIEW CURRENT ASSESSMENT STATUS" )
BUTTON probetat (
    num columns 35
    taxtline probets, 0, 2
helpfile help/nohelp.hlp
TEXTLINE probetal ( "WORK ON AMOTHER ASSESSMENT" )
```

```
BUTTON probetati (
      num_rose 1
num_columns 20
textline probetal, 0, 2
helpfile help/mohelp.hip
  TEXTLINE probate2 ( "REVIEW ASSESSMENT STATOS" )
  BUTTON probetat2 (
      tertline probabel
      taxtline probets2, 0, 2
belpfile help/nobelp.hlp
  THITLING probdef ("ADD INFORMATION TO CURRENT ASSESSMENT" )
  MUTTOW probdef {
      DER POWS
      num_columns 39
textline probdef, 0, 2
helpfile help/probdef.hlp
 TEXTLINE probdef1 ("ADD TO ASSESSMENT DEFINITION" )
 BOTTOW probdef1 {
   aus_rows 1
   aus_columns 31
      textline probdef1, 0, 2
helpfile help/probdef.hlp
 THETLINE analysis ( "AMALYEE DATA" )
 BOTTOM analysis (
      awa_oolwans 15
      textline analysis, 0, 2
helpfile help/detenel.hlp
 TEXTLINE report gen ( "MAKE A REPORT" )
 BUTTON reportgen {
     num_rose 1
num_columns 16
textline reportgen, 0, 2
helpfile help/reportgen.hlp
 TEXTLINE weekilis ( "VIEW CHECKLIST FOR CURRENT ASSESSMENT" )
 BOTTOM wachklist (
     aun_rous 1
     awa columns 42
     textline vechklis, 0, 2
helpfile help/viewlist.hlp
TEXTLINE detabaseing ( "MAKE DATABASE INQUIRIES" )
SOFFON databaseing (
     aum rows 1
aum columns 26
textline databaseing, 0, 1
     textline detabaseing, 0,
helpfile help/making.hlp
          Declarations for majoraction footers
WINDOW majorastica (
                                  -header for problem status screen
    BES TORR
     num_columns 70
                      0, 0, 0,77
"Flease select one of the following actions:"
     title
                     probdef, 2, 0, "CALL dummy"
analysis, 2,43, "CALL dummy"
reportgen, 2,62, "CALL dummy"
     button
     button
```

```
vechklist, 3, 0, "CALL downy"
databaseing, 3,52, "CALL downy"
        button
  WINDOW majoractical ( -header for report generation screen
       BEE POUR
         aum_columns 78
         معدد
                           0, 0, 0,77
        title
                            "Alternative actions you can now take:"
                     probetat2, 2, 0, "CALL dummy"
probdef1, 2,29, "CALL dummy"
weakhlist, 3, 0, "CALL dummy"
databaseing, 3,52, "CALL dummy"
        button
        button
        button
        buttom
               Declarations for MAP CONTROL
  VARIABLE shwarealts {
         type ISTROER
formet 4-5d
uplimit 124
default 78
lowlimit 20
 DATOM shwareells (
         avarows 1
avacolumns 35
          variable shwarealDS, 0 ,15
         leader "Show areas of "
trailer "(dB) <= LOW |
helpfile help/nobelp.hlp
                              . (qg) 💠 mg 💠.
 VARIABLE shwarociles (
         type INTEGER
         format 4-5d
uplimit 124
default 75
lowlimit 20
 DATEM shwareelfest (
        num_rows 1
num_columns 18
variable shwaresLDH1, 0,0
trailer "(dB)"
helpfile help/nohelp.hlp
 VARIABLE shwareapsF (
        type Inflican
format 4-5d
uplimit 124
default 75
lowlimit 20
 DATEM shwaresPSF (
        num rows 1
num columns 35
        variable shwaresFSF, 0 ,15
leader "Show areas of "
trailer "(dB) <= PSF <="
helpfile help/nohelp.hlp
VARIABLE shwareapsiri {
    type Israder
    format 4-5d
    uplimit 124
    default 75
    lowlimit 20
DATOM shwareaPST1 {
    num_rows 1
    num_columns 16
        variable shwareaPSF1, 0 ,0 trailer "(dB)"
```

```
bolpfile belp/sobelp.blp
 TEXTLINE entidptofint ("Mark the map at:")
 TEXTLINE shwidptofint ("Locate touched point")
 BOTTON shwidptofist (
      num rous 1
num columns 22
      tartline shwidptofint, 0 ,2
helpfile help/sobelp.hlp
 TEXTLEME shudist ("Show distance between two touched points:")
 BUTTON shwdist (
      aum rows 1
aum columns 43
      textline shwdist, 0 ,2
helpfile help/sobelp.hlp
TEXTLINE addelmap ("Add or Remove layers being displayed")
BUTTON eddelmap {
     aus_rows 1
      textline addelmap, 0, 2
helpfile help/mapasse.hlp
TEXTLINE addelmapinfo ("Add or Delete information on a map layer")
norrow addalmapinfo (
num rows 1
num columns 77
     textline addelmeptafo, 0, 2
helpfile help/addelmep.hlp
TRETLINE showlegend ( "Show the legend" )
BUTTOS showledged (
    num columns 17
taxtline showlegend, 0, 2
helpfile help/mobelp.hlp
TEXTLINE hidelegend { "Ride the legend" }
BUTTOW hidelegend (
    ausrows 1
num columns 17
taxtline hidelegend, 0, 2
helpfile help/nobelp.hlp
TEXTLEME erasedisplay ( "Erase the map display" )
SUFFOR arasedisplay (
     ama_columns 77
textline erasedisplay, 0, 2
helpfile help/nohelp.hlp
TEXTLEME editoolors { "Edit the color assignments" }
BUTTON editoolors (
    ann rows 1

ann rows 1

ann columns 77

textline editoolors, 0, 2

helpfile help/nohelp.hlp
 type STRING
format 48s
VARIABLE Layersever
```

```
DATEM Layersevenesse (
           num_rous 1
num_columns 77
           variable layersuvenme, 0,35
leader "Save the displayed map as:"
helpfile help/savenmp.hlp
  VARIABLE VPCSMo {
type STRING
format $7s
  DATEM TPRESS (
                                        17
"View ("
           awa colu
           trailer
                                          "):"
          veriable
          pickable
 THEFTLES WE G { "Solls.C" }
 207702 ve a {
          ama columns 9
          textline voc, 0, 2
  TRETLINE TW ma ( "Ajo.M" )
  BUTTON VW ma {
   aum rows 1
   aum columns 7
         textline wme, 0, 2
 ZENTLINE VW ms { "Sells.H" }
 B07706 TH 30 (
       num rows 1
         textline www. 0, 2
 TRITLINE VE fa { "Ajo.F" }
 SUTTON VW fa (
aua_rows 1
aua_columns 7
textline vw fa, 0, 2
TEXTLINE VW_fs { "Solls.F" }
NOTION WW fs {
    sum rows 1
    sum columns 9
    taxtline ww fs, 0, 2
WINDOW mapetrlaction (
       num rows 13
num columns 70
                                                0, 1
0, 21, "CALL new_view 'Sells.C'"
0, 33, "CALL new_view 'Ajo.M'"
0, 43, "CALL new_view 'Ajo.F'"
0, 55, "CALL new_view 'Ajo.F'"
0, 65, "CALL new_view 'Ajo.F'"
1, "NEW SCREEN nepman*
       button
                      WE,
       button
                     TW DE,
                     W Ma,
       hetton
      button
      button
                      addelmap,
      button addelmapinfo, 2, 1, "MEN SCREEN addelmapinfo"
button showlegand, 3, 1, "CALL show legand"
button hidelegand, 3, 30, "CALL hide legand"
button arasedisplay, 4, 1, "CALL clear screen"
taxtline entidptofint, 5, 3
     datum estint, 5, 21, "CALL lat2dec Seat", "NEWVALS" cation entloag, 5, 48, "CALL loa2dec Seat", "NEWVALS" button editoclors, 6, 1, "CALL edit colors" button shwidptofint, 7, 1, "CALL show coords" catum shwint, 7, 25
```

```
7, 52
8, 1, "CALL show_dist"
                    shulong,
                    shwdist,
                    shudist,
                                         8, 46
                    shwareelDW,
                                           9, 3, "CALL d
                   shwarealder, 9, 3, "CALL dwnny"
shwarealder, 9, 40, "CALL dwnny"
shwarealder, 10, 3, "CALL dwnny"
shwarealder, 10, 40, "CALL dwnny"
layersevenome, 12, 1, "CALL store_screen"
       datus
       detes
 SCREEN mapoostrol (
       title
                      "MAP DISPLAY COURTECL"
    mainscreen
                         YES
                                                                         ---- PARE FARE FARE PARE
        window assumacon, 2,1
window asspatrlaction, 5,1
window majoraction3, 18,1
               Declaration for MAP MANDAGER
 DATOM GETVION (
        BEE FOWS
        aum columns
                                    22
        looder
                                    "CURRENT VIEW:"
        variable
                                    vpacma, 0 , 14
        pickable
 TEXTLISE layortet_tit { "AVAILABLE MAP LAYERS:" }
 TENTRICOR layertat (
      aum_columns 51
     border YES
fileneme layers.txt
TEXTLINE layermow_tit ( "MOW DISPLAYED:" )
WINDOW layertat (
     ama_rows 14
      aus columns 51
     datus ourview, 0, 0
textline layertrit tit, 1, 0
textline layersow_tit, 0, 37
textblock layertrit, 2, 0
 )
WINDOW layermon (
     num rows 17
num columns 10
border YES
                       YES
     detun
detun
detun
detun
detun
                       dlness , 1 , 1
dlness , 2 , 1
dlness , 3 , 1
dlness , 4 , 1
dlness , 5 , 1
                       dlaca4 ,
dlaca5 ,
     detus
detus
detus
detus
detus
                        dlnem5 , 7 , 1
dlnem7 , 8 , 1
dlnem8 , 9 , 1
                        dlness , 9 , 1 dlness , 10 , 1
                       dlam10 , 11 , 1
dlam11 , 12 , 1
dlam12 , 13 , 1
     detus
detus
                       dlacal3 , 14 , 1
dlacal4 , 15 , 1
VARIABLE layer2add {
    type
                     STRING
     format
                       48=
DATOM layer2add {
     num rows 1
     num columns 34
     leader "Add map layer"
trailer "to display"
```

```
variable layer2add , 0 , 15
    VARIABLE layer2del {
                      929.3333
48a
    DATOM layeridel (
         num rows 1
         ata_ooluus 39
        leader "Remove map layer"
trailer "from display"
variable layer2del , 0 , 18
        leader
    WINDOW asklayer {
        num columns 41
        datum layer2add , 0 , 1 , "CALL add layer" datum layer2del , 1 , 1 , "CALL del layer"
    THETLINE donal ("Return to Map Control Screen")
    BUTTOW donal (
          aus rous 1
         num columns 33
textline down1, 0,2
helpfile help/newssmat.hlp
    WINDOW | done1 {
         num columns 50
button dome1, 0 ,2,
helpfile help/newsemmt.hlp
                                             "HER_SCREEN mapcontrol"
    SCREET mapman (
title "HAR SCREET MORRAGEM
                      assamacom , 2 , 1
layartat , 5 , 2
layarnow , 5 , 54
neklayar , 19 , 1
donal , 21 , 1
         window
          window
          window
          Window
          window
   " Declarations for ADD OR DELETE INFORMATION FROM A MAP
   THITLISE notavail {"Sorry, this facility is not yet available"}
   WINDOW addelmapinfo (
         aum_columns 78
         textline sotavail, 4,10
helpfile help/nohelp.hlp
   SCHOOL addelmopinfo (
         title
                      "ADD OR DELETE INFORMATION ON A MAP LAYER"
         window
                      assnemoca, 2, 1
                  addalmapinfo, 8, 1
domai, 14, 15
majoraction, 18,1
         window
             Declaration for entering coordinates window
TEXTLINE entupplf
    ("Enter upper-left corner coordinates of area of current interest")
   TEXTLINE catlourt
     {"Enter lower right corner coordinates of area of current interest"}
```

```
DATEM shwist2 {
    sum_rows 1
    sum_columns 25
    variable shwist, 0 ,11
    leader "Letitude: "
    helpfile help/combmap.hlp
}

DATEM shwicag2 {
    sum_rows 1
    sum_columns 25
    variable shwicag, 0 ,12
    leader "Longitude: "
    helpfile help/combmap.hlp
}

WIMDOW entcoor {
    sum_rows 10
    sum_columns 78
    tartline entupplf, 2, 2
    datum entlong, 3, 30, "CALL let2ded Sent", "MENVALS"
    datum entlong, 3, 20, "CALL lon2ded Sent", "MENVALS"
    datum shwist2, 6, 1, "CALL lon2ded Sehow", "MENVALS"
    datum shwicag2, 6, 36, "CALL lon2ded Sehow", "MENVALS"
}

- end of g.sdf
```

Appendix B PROGRAM LISTINGS

The following listings are the C-language software modules of which ASAN is composed.

```
seen.pc -- ASAN Main Program
               1. Opens the printer.
              2. Calls strtASAN to establish communication with CRACIE
              3. Varifies that ASAN software is valid.
               4. Calls Uinit to start the screen driver.
               S. At end of the session closes database and printer
 Sinclada <stdio.b>
 dinalude oprocess.b>
 @include <string.h>
 disolude <time.b>
BRIEG SQL BEGIN DECLARS SECTION;
MINC SQL INCLUDE faharris.h;
EXEC SQL INCLUDE hostware.h;
DONG SOL END DECLARE SECTION:
 EREC SQL INCLUDE SQLCA;
 define SQLCA STORAGE CLASS
 dinclude "asan.h"
main ()
 estern int her DEROG FEATURES;
int OC_u2ll_spheroid(), sloseOSA(), logentry(), strtASAW(), vfy_AMAW();
 world emptage ();
 static char *legal_notice[11] =
 {"\a\a\a\a\t\t\t RESTRICTED RIGHTS LEGEND\a\a",
 '\tUse, duplication, or disclosure is subject to restrictions\n",
        as set forth in subdivision (b) (3) (ii) of the\n",
"\t Rights in Technical Data and Computer Software Clause\n",
"\t\t at 52.227-7013 of the DOD FAR Supplement.\n\n",
"\t\t\tBBS LABORATORIES INCORPORATED\n",
"\t\t\t 10 MOULFON STREET\n",
"\t\t\t Combridge, MA 02230\n",
"\t\t\t 617-873-3000\n\n\n",
" User Interface Copyright (C) 1985, BBM Laboratories Incorporated\n",
"\t\t\t All Rights Reserved");
FILE *fopen();
pra = fopen("pra", "a");
if (pra == MULL) {
   printf("\nCan't open printer!"); exit(128); }
dante = fopen("chronfil.eaf", "a");
if (deste - NULL) (
   printf("\nCan't open chroafile!"); exit(128); }
printf("to[2J", 27);
for (i = 0; i < 11; i++) printf("4s", lagal_notice[i]);
printf("\a\a\a\a\a\t Flease tup the space ber to continue, \"CTRL-C\" \
to abort. \a\n");
do (
    } while (1 != ' ');
printf("\nASAW starting....");
```

```
REIA DEROG FRATURES = 1;
  utmsone = 12;
  OC_u2ll_spheroid("clark66");
 strtAGAS();
 Bifdef CHRONOTE
 printf("\afucossfully connected as Project td (ts)\afrivileges are",
ASSESSMENT.id, ASSESSMENT.acme);
 for (1 = 0; 1 < 3; 1++) printf(" to ", Assessment auth(1));
 Bendiff
       You are now successfully commercied to CRACLE. Compare the
 /*
       software actually running to what is in the validation file.
 1f (vfy_MGAH()) exit(16);
 /=
       You are now successfully COMMECTed to ASAM. Control is
        transferred to Uinit, whence it returns only at the very
        end unless scmething untoward happens along the way and
 /*
       MAN decides to pull the plug in midstreem somewhere.
 Winit();
 logestry();
closeORA();
 printf("40[24; 18", 27);
 amit (0);
 oca2db.pc
                -- Boutines connecting a UMERSTAND to CRACLE, etc.
      This file contains:
      ASSESSMEN
                   - connects any ASAN Assessment to CRACIE
      alossona
                   - closes ORACLE DEME
      lastsess
                   - retrieves last session from the logbook
      logestry
                   - makes an entry in the Assessment's logbook
      жубъемо
                   - fills in ORACLE user portion of ASSESSMENT structure
      Brollona
                   - enrolls a new Assessm
                                          ent as an ORACLE User
                   - connects ASAN's SUPERUSER to ORACLE.
      Profes
                   - determines if a username exists in coacus.
***********************************
disclude Oproces . h
                                    /* Bondor for calls to MS-DOS */
finalade (stdio.b)
#define SQLCA STORAGE CLASS extern
                                   /* Switch for header files
                                    /* All SQL declarations for this */
EXEC SQL BEGIN DECLARE SECTION;
EXEC SQL INCLODE hostwars.h;
                                        are in these two header files */
EXEC SQL INCLUDE faharris.h;
                                    /* this one oce
                                                    es from "O"
MINEC SQL MED DECLARE SECTION;
BEERC SQL INCLUDE SQLCA;
Sinclude "ssan.h"
                                    /* Standard ASAE Ecodor File
ist Millioons (nes
ASANGORN -- Connect an ASAN Assessment to CRACLE
     Boutine ROLLS BACK any outstanding transactions of the current
      user and then connects to the requested user. Returns an error code which indicates whether or not the COMMECT was successful.
    Notes: 1. The existence of the assessment on the detabase is
                 assumed. ( vfyOid(name) is available to check.)
             2. If the name requested is not a "real" assessme
                 but one of the privileged ORACLE names (used for
                 system maintenance, DEA functions, etc.) the COMMET
                 will fail (sqlos.sqloods - SQL_NAD LOGOS). If so,
                 you will be re-consecred to the old assessment and
                 the error code of the failed connect is returned
                 to the calling program.
```

```
register int 1, j;
 ist temp, logestry(), loggedon(), myCamme(), recon, SUccon();
 Poid omposes ():
 cher *alock();
 Bifdef CHRCHOUT
   printf("\mASAMooum: 4s", memo);
                      /* Verify that we know who the person responsible is */
loggedon ();
SLOOT ("Flease stand by: Switching assessments....");
logestry(); /* Make entry is log book and disconnect previous user */
MHIREAMI (Screen, Window, Detus, Button);
misslabl.arr[0] = misdesc.arr[0] = '\0';
misslabl.len
                 = misdosc.len = 0;
if ( (sqlca.sqlcode - 0) ||
                                            /* These are reasonable return codes */
      (sqlos.sqloods - EOT LOGGED ON) ||
      (sqlos.sqloods - NOT COMMETTED) )
                                       /# Note: The SQL COMMECT statement
    stropy ( uid.arr, name );
    wid.les = strles ( wid.arr );
                                       /* doesn't like an immediate p
/* and a dynamic username.....
                                           /* doesn't like an immediate pessword */
   stropy ( ped.arr, univped); /* and
ped.lea = strlea ( ped.arr );
EXEC SQL COMMECT : uid IDESTIFIED BY :ped;
    temp = (int) sqloa.sqlooda;
    Bifdet CHECKOOT
   printf(" Connect = %ld", sqlca.sqlcods);
    switch (temp) (
                                               /* What did ORACLE ocuse up with? */
    G250 0:
                                               /* commer succeeded as planned */
       fprintf (dante,
                                               /* Load the Assessment structure */
      "\ats Connected to to ID = td (ts)", /* and if that was o.k. you can */
         slock(), planram.arr,
                                              /* Fick up the description from */
/* the site's table of contents */
         mermo, mid.arr);
       if (inyoneme()) (
          MANGE SQL SELECT description
               FROM table of contents
               INTO :workspace
               WHERE idnumber = : searne:
          fifdef CHECKOUT
             printf(" %ld", sqlos.sqloode);
          Bendie
          if (|sqlcs.sqlcode) ( /* Found a description in table of contents */
             workspace.arr[workspace.len] = '\0'; /* Truncate description */
) = (sizeof ASSESSERT desc) -1; /* to fit on the sureen */
             if (workspace.les >= j) (
                for(i = 0; i < j; i++) ASSESSMENT.desc[i] = workspace.arr[i];
             ASSESSMENT.desc[j] = '\0'; )
else stropy(ASSESSMENT.desc, workspace.arr);
          also ( /* No Description .... How can this befffy #/
             fprintf(dante, "\n*s ASAWoonn: %s not in T.O.C", clock(), wid.arr);
fprintf(dante, "\n\t\t\t %s", sqlcs.sqlcrrm.sqlcrrmc);
             SLOUTES ("Security Violation: Table of contents error");
/* This will become a security violation!
             aloseORA();
             exit (255) ;
                           But for now, let it go by */
             stropy (ASSESSMENT . desc,
                     "Description missing from table of contents");
         EXEC SQL SELECT TO CHAR (SYSDATE, 'DD-Mon-YY SE24:MI:SS')
         FROM dual INTO :timest1;
         printf("*ld", sqlca.sqlcode);
         Sendif
         EXEC SQL SELECT TO_CEAR(start_work, 'dd-Mon-yy HE24:MI:SS')
                   FROM logbook
DHTO :startdate
                   MERCE start work -
                           (SELECT MIN(start_work) from logbook);
```

```
Hifdel CHECKOUT
           printf("%ld", sqloa.sqloods);
          if (sqlos.sqloode) {
             startdate.len = timesti.len;
                 stracpy(lastdate.arr, timestl.arr, timestl.len);
lastdate.len = timestl.len;
                 lastatr.les = 0;
                 lestmon.les = 0;)
             olse (
                Sprintf(dente, "\nts Assiscen: to logbook error",
                clock(), wid.arr);
fprintf(dante, "\a\t\t\t %s", sqlos.sqlorms.sqlorme(); }
          also (
             REEC SQL SELECT lastmir, lastmos
                       PROM logbook
INTO :lastatr, :lastace
WHERE stop work =
             (SELECT MAX(stop_work) from logbook);
            printf("%ld", sqlos.sqloode);
         lastmir.arr[lastmir.lea] = '\0';
         lastmon.arr[lastmon.len] = '\0';
         /* All that's laft now is to put up the screen */
         MEN SCREEN ("probatatscreen");
         MENVALE();
         if (Assessment.auth[2] != 'T')
            SLOUTER ("This assessment does not have resource authorization");
         return (int) 0;
     alse {
         fprintf(dante, "\n*s Mysterious failure on *s", clock(), mid.arr);
        fprintf(dante, "\a\t\t\t\t %s", sqlcs.sqlerms.sqlermsc);
fprintf(dante, "\a\t\t\t\t while retrieving info from STS.VARNOUNER");
        temp = (int) sqlca.sqlcode;
        SLOUTER ("Undiagnosible system failure. ASAN will restart");
        stropy (Assessment.neme, "SUPERUSER");
        MEN SCREEN ("firstscreen");
        brook; }
 /* Trouble in River City if you get this far down in the switch .... */
 GREE SQL NO TERROTRASE:
    SLOUTEF ("You cannot use a blank as a name");
 case SQL BAD LOCON:
 Case NOT LOGGED ON:
    EDOMS:
    fprintf(dante, "\nts Authorization failure on %s", clock(), mid.arr);
    fprintf(dente, "\n\t\t\t\ te", sqloa.sqlerm.sqlerme);
sprintf( workspace.arr, "Unsuccessful: te",
             sqlcs .sqlerm .sqlerms);
    SLOUTEP (workspace.arr);
   break:
dofault:
   EDOMS;
   fprintf( dants, "\nts Unsuccessful logon: ts", clock(), wid.arr);
   fprintf( dante, "\n\t\t\t ", sqlca.sqlarms.sqlermsc);
   sprintf(workspace.arr, "Unsuccessful: %s", sqlca.sqlerm.sqlerma);
   MLOUTES (workspace.arr);
) /* End SWITCE */
stropy ( wid.err, Assessment.none);
                                          /* Re-COMMECT with */
wid.len = strlen ( wid.arr ); /* provious name.

if ( strong("SUPERUSER", wid.arr) ) {

KINC SQL COMMECT : wid IDENTIFIED BY :pwd;
wid.len = strlen ( mid.arr );
   recon = (int) sqlos.sqloods;
  /* Re-initialize the screen. Logentry() call has closed all cursors: */
if (!recon && (!strcmp(Screen, "chgcurasscreen")) ) {
     pechgase ();
```

```
return temp; }
    else recon = SUconn();
    1f (2000a) {
                            /* Now we're stuck beyond help */
       ESTOCKEG.
       SLOUTEF ("ASAN got \"stuck\" looking for the data....");
       fprintf( dante, "\nte Adamoun stuck: ts", alock(),
                sqlcs.sqlerm.sqlerme);
       fprintf( danta, "\m'\t\t\t After attempted re-connect to %s", mid.arr);
       closeORA();
       emit (255);}
    SLOUTED ("AGAN must restart due to an internal error");
    MER SCREEN ("firstscreen");
    return temp;
 alse ( ampagg():
                                    /* If you get here, you've been doing */
    fprintf (dente,
    fprintf(dante, /* scatthing outstandingly bisarre a */
"\n$s Forced shut-down by $s", /* long time before this function was */
    aloak(),
                                    /* called. No idea how to recover! */
    sqlos . sqlorm . sqlormo) ;
    elocoORA();
    exit (255);
 ()AROssola
 closeCRA -- Disconnect an ASAN Assessment from CRACIE
                            and return CRACLE to original state as
                            given by 00_roods.
       Routine ROLLS BACK any outstanding transactions of the current
        user and them disconnects from ORACLE. Returns an error code
       which indicates whether or not the call was successful.
      Hotes: 1. The value of 00 code is set in the main() function
as the return code of the initial logon attempt. If
these codes change in subsequent releases of ORACLE
                    this function must be recompiled with the new codes.
                2. Unless the current user is SUPERUSER or this function
                    is called because of an unrecoverable CRACLE error.
                    calls to closeCFA() should be preceded by logentry();
****************************
int doods, faloss(), spawalp();
char *clock();
fifdef CHECKOUT
printf("\maloseCBA");
Bondif
                                 *** End AGRE ***");
fprintf(dante, "\nts ASAN Close-down process:", glock());
EXEC SQL ROLLBACK NORE RELEASE;
Bifdef CHRCHOUT
printf(" rolled back *ld", sqlos.sqloods);
  2100
if (00_reede = 0) {
                          /* He're done if CRACLE was up when we started */
   fprintf (dante, " Servers rotained intact");
if ((00_roode == 08A_DERVAILABLE) || (00_roode == -3120)) {
doode = spewalp(F_MAIX, "ior.exe", "ior.exe", "shut", HOLL);
   difdef CERCHOUS
   printf(" 4d", deode);
   Bondif
   fprintf(dante, "\ats Shut down ORACLE Server (%d)", clock(), doode);
   12 (00 reeds != ORA UNAVAILABLE) (
      doods = spawnlp (9 MAIT, "remorm.ams", "remorm.ams", "all", MULL);
      #ifdef CEBCROOT
      printf(" %d", doode);
      Bondse
      fprintf(danto, "\nts Deinstalled SQLPME (td)", clock(), doods);
      return doode:
```

```
)
else { /* Could be AMAN wasn't installed, or .... */
fprintf(dante, * Servers left unchanged (Code %d)*, 00_roods);
 fprintf(dante, "\n");
 falose (dante) ;
 falose (pra) ;
 int lastsess()
 Retrieves last entry from the ASAN logbook. It is
                      used when we need to establish the last activity on
                      the system. (SUPERUSER does not log its notivity.)
       Between the value of sqloa.sqloods to calling program
 fifter cancerors
 printf("\mlastsess ");
 Bendif
 SLOUT("Re-loading the last session's parameters");
 EXEC SQL SELECT planer, 70 CHAR(stop work, 'DO-Mon-TY HE24:MI:SS'), idenuber
         FROM lastlog */
          FROM last logia
          INTO :plantist, :lastdate, :userno;
 difdef CENCEDUT
 printf("*ld", sqlom.sqloode);
 Sendif
if (!sqlos.sqloods) {
                                   /* This is what happens when all is O.E. */
   planrist.arr[planrist.lea] = '\0';
    lastdate.arr[lastdate.les] = '\0';
else if ( sqlom.sqloods == SQL_ROF ) { /* When you start the very first time
   stropy(planrist.arr, "No work ever done yet");
planrist.arr[21] = '\0';
planrist.len = 21;
lastdate.arr[0] = '\0';
   lastdeto . len
alse (
   REPORTED:
   fprintf (dente,
   "\ats Incomprehensible return code tld retrieving last session",
clock(), sqlca.sqlcode);
fprintf(dante, "\a\t\t\t ts", sqlca.sqlcrm.sqlcrmc);
   emponeg();
difdef CHECKOUT
printf("\nts, ts, td", planrist.arr, lastdate.arr, userno);
Beadle
return (int) sqlos.sqloods;
int logestry()
logestry --
                   Makes an entry in the ASAW register for the work just
                     performed on the assessment. It is called by the
                     ASAMoonn and Suconn routines when they close out the
                     previous assessment.
      Neturns the value of sqlca.sqlcode to calling program
```

```
int roods;
  char *clock();
 Bifdef CHRCHOUT
    printf("\alogestry: ");
 if (strong (ASSESDAMMY. name, "SUFERUSER")) { /* Make entry in log book if the */
                                        /* previous name was not SUFERISHE. */
/* Terminate whatever is outstanding */
    BEEC SQL ROLLBACK WORK;
       fdef CEECHOUT /* One normally expects 0 here, but */
printf(" *ld", sqloa.sqloods); /* occasionally scenthing horrid has */
    difdet CEECHOUT
                                        /* been known to pop up here.
    Bonds &
    if (sqlos.sqloodo != 0) {
       if ((sqlos.sqloods |= NOT_LOGOND_ON) &&
           (sqlos.sqloods |= NOT_COMMECTED)) {
          sprintf(workspace.arr, "Logbook shoked on: 4s",
                  sqloa. sqlorm.sqlorme);
          fprintf (deste, "\n+s +s\t\t\t making logbook entry for +s",
                  alock(), sqlca.sqlerm.sqlerme, Assessment.asse);
          SLOUTER (workspace.arr);}
    alse (
              /* All is well and we are ready to make the logbook entry
       Merro - ASSESSMENT.14:
       BEEC SQL SELECT TO_CHAR (STEDATE, 'dd-mon-yy MEE4:MI:88')
               FROM DUAL INTO :timest2;
       BIBC SQL IMSERT INTO register (pleaser,
                                                  lastatr.
                                                            lastmos.
                                     start_work, stop_work, idnumber)
                      VALUES (:planman, :lastmir, :lastmon,
                               TO DATE (:timest1, 'dd-mon-yy EE24:MI:SS'),
                               TO DATE (:timest2, 'dd-mon-yy HE24:MI:SE'),
                               : Gerroo) :
       Bildet CHECKET
         printf("IMSERT tld", sqloa.sqloode);
         addf
       if (roods = sqlom.sqloods) ( /* Just in case it fails....
          fprintf(dente, "\n*s Logbook entry failed: *s",
                      alock(), sqlas.sqlarm.sqlarma);
          fprintf(danto, "\t\t\t %s (ID = %d)", lesses addr.neme, weerso);
fprintf(danto, "n\t\t\t %s, %s, %s",
                planram.arr, timest1.arr, timest2.arr);
          EXEC SQL ROLLBACK WORK RELEASE;
          #ifdef CEBCHOUT
            printf(" Bolled back *ld", sqlos.sqloods);
          Sendiff
      alsa {
         BEEC SQL COMMET WORK BELEASE;
         gifdef CHECECUT
         printf(" Committed %ld", sqlom.sqloods);
         fprintf(dante, "\n*s Disconnected to from ID = td (ts)",
                      slock(), plantam.arr, userno, Assessment.nee
alse (
                                      /* If you are SUPERUSER, just make */
   REEC SQL ROLLBACK WORK RELEASE; /* a call to log off and return
   #1fdef CENCENOT
     printf(" %ld (SU Bypassed)", sqloa.sqloode);
   Boadif
return (int) sqlos.sqloods;
int myonamo ()
To set the CRACLE USER information in the ASSESSMENT
                     structure so it is available to all ASAN routines.
                    Looks in view SYS. VARXPUSER and retrieves USERID,
                    MYEARE, TIMESTAND and authorization codes.
     Returns the value of sqlom.sqloods to calling progrem
************************
```

```
fifth CHECKOT
printf("\mmyOnemo: ");
EXEC OOL SELECT myid, myprivs, myneme
                FROM sys. véespuser
DETO : seerno, :0 suth, :my nemo;
my nemo.arr[my nemo.len] = '\0';
printf(" *ld - *d (*e) \n", sqlos.sqloode, my_mme.len, my_mme.arr);
 Boads#
                                           /* Store results in global */
stropy(Managamir.ness, my_ness.arr);
                                           /* Assessment structure
AGGEGRAPHT .1d = BGOTRO:
Assistment.auth[0] = 0_auth.arr[0];
ASSESSMENT. auth[1] = 0_auth.arr[1];
ASSESSMENT. auth[2] = 0 auth.arr[2];
return (int) sqlos.sqloods;
int prolloga (name)
arolloga -- ASAN's SOVEROSER Grants COMMECT and RESCURCE
                   to new CRACIAL user
      Routine a). Signs on as SUPERCEER, if current user not DEA.
               b) . Enrolls a new ORACLE USERSAME.
             a). Signs on under the new assessment's name.
   Returns to calling program with sqlcs.sqlcode of last step amounted.
Routine terminates immediately if a sub-step returns a non-zero code.
      Beturns (EERO) if successful or (EGS-EERO) if not successful.
             Most likely, in order of appearance
              -0001 - Name already exists
              -0954 - No IDENTIFIED BY clause (i.e. blanks in name)
              -0987 - Illegal character in usernon
              -anna - Any other ORACLE error that can occur
char name [];
int dlen, roods, wfyOid(), SUCCOR();
register int 1, j;
char *clock():
static cher imputline[] = "estdesc ";
difdef CHECHOT
printf("\narollORA");
dalse
SLOUT("A moment, please, while ASAH updated its database.....");
Bondif
if ( roods = $Uccen() ) { /* SUPERUSER's services are regired to do this */
   flidef CHRCHOOT
     printf(" %ld", sqloa.sqloods);
   Bondif
   sprintf(workspace.arr, "SUPERUSER LOGON REGULST CRASEED Error td.",
          roode);
   MLOUTER (workspace.arr);
   SLOUTS ("You need serious help!.....");
   fprintf(dante, "\nts MRCLLORA: Superuser logon crashed", clock());
   BEEDONING .
   fprintf(deste, "\z\t\t\t %s", sqlca.sqlerms.sqlerms);
   aloseona();
   exit (255);
                              /* Convert name to uppercase because */
j = n2bv.lea = strlea(name);
for (1 = 0; 1 < j; 1++)
                                   /* ORACLE keeps USERGAME in uppercess */
  n2bv.srr[i] = neme[i] = toupper(neme[i]);
n2bv.arr[n2bv.len] = '\0';
stropy (workspace.arr, "GRANT COMMICT, RESOURCE TO "); /* The GRANT statement */
stroat(workspace.arr, name);
stroat(workspace.arr, " IDENTIFIED BY ");
                                                    /* ment is not part of */
                                                    /* AMSI standard SQL! */
stroat (workspace.arr, univpwd);
workspace.len = strlen(workspace.arr);
```

```
EREC SQL ERECUTE HOMDIATE : workspace;
Bifdet CHRCHOUT
printf("\nts %ld", workspace.arr, sqlca.sqlcode);
if (sqlog.sqloods) ( /* Who knows what evil lurks in the heart of CRACLE? */
   fprintf(deste, "\ats Failed to earol %s/a/t/t/t %s",
                  clock(), some, sqlon.sqlorms.sqlorms();
                                 /* This trops any illegal characters */
   return (int) sqlos.sqloode;}
                                    /* and other strange things . . .
fprintf(dante, "\nts Successfully enrolled ts", aloak(), name);
EXEC POL SELECT userid
               FROM systematist
                DETO : ULA
                WHERE RESTRESS OF : B2by:
                                     /* User may enter up to 240 */
/* characters of drivel to */
/* identify this assessment */
ADD_WIMDOW( "newasdesc" , 5, 5);
workspace.arr[0] = '\0';
for (1 = 0; 1 < 4; 1++) {
   imputline[7] = i+49;
   UPDATE_DATUM(imputline);
   entdesc[1].len = strlen(entdesc[1].arr);
   if (entdeso[i].len == 0) break;
   street (workspace.arr, estdess[1].arr);
   if (entdeec[1].len < 50) breek;
workspace.len = strlen(workspace.arr);
REMOVE_WINDOW();
EXEC SQL INSERT IFFO table of contents (idnumber, description) VALUES (:mid, :workspace);
if (sqlos.sqloods) f
   fprintf(daste, "\ats Table of contents entry failed\a\t\t\t &s ",
                alock(), sqlca.sqlerm.sqlerma);
   SLOUTS (sqlos . sqlerm . sqlermo) ;
   roode = (int) sqloa.sqloode;
                                      /* This will cause the assessment */
                                      /* to become invisible to ASAN or */
/* may lead to security violation */
   EXEC SQL ROLLBACK WOOK;
   #1fdef CRECKOUT
   printf(" %ld", sqloa.sqloods);
                                      /* arrors that will stop amountion */
   Bondie
olso (
   BIRC BOL CORRETT WORK;
   roods = ASAHoona (nems) ;
                                      /* Once you get this far, sign on. */
   Bifdef CHRCHOTT
                                      /* This better never be non-zero! */
   printf(" %ld", sqlom.sqloode);
   Bendit F
return roods:
int SUccess ()
Connect ASAN's SUPERUSER to ORACLE
        Returns SQLCA. SQLCODE
static char deadd[] = (0123,0125,0120,0105,0122,0125,0123,0105,0122,057,
                       0115,0105,0120,0110,0111,0123,0124,0117,0120,0110,
                       0105,0114,0105,0123,'\0'};
int temp, logentry(), myOneme();
#ifdef CRECKOUT
printf("\astoona: ");
Bendie
logestry();
             /* Make logbook estry and terminate whatever is outstanding */
stropy( mid.arr, dbamid );
                                   /* Connect */
uid.len = strlen( uid.arr );
BORC SQL COMMET : wid:
```

```
difdef CHECEDUT
 printf(" *ld", sqloa.sqloods);
 Bear 44 #
 if (!sqlca.sqlcode) myOnema();
stropy(ASSESSEET.deeq,"Owner of ASSE's Administrative Information");
 return (int) sqlom.sqloode;
 int vfv0id(ness)
 viyoid -- Verify that a USERSHAW exists in ORACLE's Dictionary
     Determines if the username exists from the SYSUSERLIST View.
      Returns SOLCA. SOLCODE of the SELECT statement.
 /* Argument is pointer to character string */
/* containing the usernme to validate */
 ther ame !!:
register int 1;
Difdet CERCEOUT
printf("\nvfyoid");
 Ban41#
n2bv.len = strlen(name); /* Set up for WHERE clause of the SHLECT */
for (i = 0; i < a2bv.len; i++) /* CRACLE likes uppercase names */
n2bv.arr[i] = toupper(name[i]);
EXEC SQL SELECT userid
        FROM sysuscrist
         WHERE RESERVES = :22bv ;
Difdef CHBCROOT
    printf(" %ld", sqlog.sqloode);
return (int) sqlos.sqloods;
houserpt.pc -- Set of routines to print "housekeeping" data from
                    the ORACLE Data Dictionary.
    Routines in this file:
      SCorint
                 - Allows SUPERUSER to print an assessments tables
                 - Selects level of detail for SUprint or prints
      Supropt
                    BEADQUARTERS or SUFERUSER tables with that option
                - Prints names and comments on tables for assessment
      pantool()
                - Frints names of all tables and names and comments
                    of columns within tables
      pratabe() - Prints TABLE_OF_CONTENTS entries
*****************************
                               /* The usual stuff, of course */
/* Escalar for calls to MS-DOS */
/* String manipulation header */
#include <stdio.b>
#inglude oprocess.h>
#include <string.h>
Sdofine SQLCA STORAGE CLASS extern
EXEC SQL INCLUDE SQLCA;
                               /* SQL Communication Area */
EXEC BOL REGIN DECLARS SECTION.
EXEC SOL INCLUDE hostvars.h:
EXEC SQL MED DECLARE SECTION;
#include "esentype.h"
finclude "asan.h"
                              /* Standard ASAN Sender file */
static printoptica = 0;
int SUprint (name)
```

```
SUprint ()
                  --- Print tables for an assessment (called from the
                        housekeeping sursen while SUPERUSER is connected
      Rowtine logs on as the named assessment, prints tables as that
      assessment, roturns to surrowers, puts up housekeeping screen again.
 ***********************
 char *clock():
stropy (wid.arr, acme);
wid.los = strles(wid.arr);
stropy (pwd.arr, univped);
pwd.len = strlen(pwd.arr);
 HERC SQL BOLLBACK WORK RELEASE;
EDGEC SQL COMMET : wid IDENTIFIED BY :ped;
if (sqlos.sqloods) {
   TENDORGO:
   fprintf(dante, "\ats Could not connect to te for printing tables",
   dlock(), mane);
fprintf(dante, "\n\t\t\t %s", sqlom.sqlerrm.sqlerrmd);
stcorms("Could not connect to assessment");
   SLOUTP (sqlca.sqlerm.sqlermc);
also (
   mycome ();
   if (printoption == 1) pratool();
also pratabe();
   3
stropy (ASSESSEET . neme, "SUPERUSER");
SUGOGE ();
if (sqlca.sqlcode) (
   fprintf(dants, "\nts Could not reconnect after printing tables for ts",
   glock(), name);
fprintf(dante, "\n\t\t\t %s", sqlca.sqlarma;;
slcorms("Could not reconnect to SUPERWEER");
   SLOUTS (sqlos.sqlorm.sqlorma);
   exit (255);
MEN_SCREEN ("Chkselpgscreen");
roturn (int) 0;
int SUpropt (value)
SUpropt() --- Set options for printing assessments or print the 
MEADQUARTERS or SUPERWERR tables
      Routine logs on as the named assessment, prints tables as that
      assessment, returns to SUPERUSER, puts up housekeeping screen again.
int value;
char *clock();
fifdef CHECKOTT
  printf("\asopropt 4d", value);
Sendif
switch (value) {
0256 1:
  printoption = 1;
  if (mlisto()) {
     Bercomes:
      SLOUTS (sqlos . sqlorum . sqlorumc) ;
      roturn (int) -1;}
  blakdepl();
  HEN_SCREEN("slossoreen");
  whunch ():
  roturn (int) 0;
025e 2:
  printoption = 2;
  if (ulisto()) {
     EEDCHOG;
     SLOUTS (sqlca.sqlarm.sqlarma);
```

```
roturn (int) -1;}
    blakdopl();
    MEN SCRUM ("slossscroes");
     ubusah ();
    return (int) 0;
 case 3:
 ulista();
 optr1 = hquoen;
ECHC SQL ROLLBACK WOOK RELBASE;
 BORN SQL COMMET : optr1;
 if (sqlos.sqloods) {
    fprintf (dante, "\ate Could not connect to HEADQUARTERS for printing tables",
    alodk());
fprintf(dante, "\a\t\t\t %s", sqlca.sqlcrma.sqlcrma);
sLOUTEP("Could not connect HEADQUARTERS");
    SLOUTS (sqlca.sqlerm.sqlerma);
 also {
    myOnume ();
    if (printoption == 2) pratool();
    olso pratabe();
 stropy (Assistant) . name, "SUPERCERT");
 STOCON ():
 if (sqloa.sqloods) {
    MOCHEG;
    fprintf (daste, "\nts Could not reconnect after printing HEADQUARTERS tables",
                     aloak());
    fprintf(deste, "\n\t\t\t *s", sqlos.sqlerms.sqlerms);
    SLOUTER ("Could not reconnect to SUPERCEER");
    SLOUTS (sqlos.sqlorm.sqlorme);
    azit (255) ;
HEN_SCHESS ("dbbsekpgscreen");
roturn (int) 0;
 default:
mlista();
if (printoption == 2) pratool();
olse pratebs();
   )
HERE_SCHEEN ("dbbsolopgscreen");
return (int) 0;
int pratabe()
       prutabs ()
                  --- Print a list of all tables for this assess
      Routine opens cursor U2 than fetches rows until SQL_BOF is found.
Each row printed on the system printer. Then the cursor is closed.
      Note: Modifications to this function may impact the related
functions tlisto(), tlistf() and tlists() that open the
               cursor, fotch rows using it respectively, and close it
****************************
Odefine PAGMETER 54
Funded COMMERTERACE 54
int i, j, line, lop, nop, page;
                                                 /* Counters for lines, etc.
                                                                                   #/
int tlisto();
                                                 /* Database Utilities Used
int tlistf();
int tlists();
SLOUT ("Printing tables");
1f ( | tlisto() ) {
                                               /* Open sys. viesptab query
  1 - 0;
   page = 1:
   fprintf( prm, "\t\tInventory of Tables for %s\t\tPage %d\n",
            ASSESSMENT name, page);
  while ( sqlos.sqloods != SQL_BOF ) {
```

```
12 ( line >= PAGESTEE ) {
                                                 /# Make sure that you have space #/
           Sprints( pra, "/f/t/timesstory of Tables for ts/t/trage td/a",
                    ASSESSMENT DENG, +ipage);
       j++; /* Frint name of the table */
fprintf(prn, "\n*4d %-20s ", j, tid.arr); /* Assumes <= 20 char! */
       lop = 0; /* Frint as many characters as the comment field contains */
        while (lop < workspace.lea) {
    nop = (lop+concentreract < workspace.lea) ?
                      lop+communation : workspace.les;
           for ( ; acp > lop; acp--) /* Find good spot to end this line */
if (workspace.arr[acp] == ' ' ||
                   workspace.arr[amp] = '\0') break;
          if (lop == nop) { /* In case we have a line without white space */
fprintf(prn, " ");
              for ( ; map < lap+Commercaranaca; map++)
                 fprintf(prm, "tc", workspace.arr[acp]);
fprintf(prm, "\a\t\t\t");
                 limatt; }
           else { /* The normal case whom we can find a white space somewhere */
              workspace.arr[nop] = '\0';
fprintf(pra, "%s\a\t\t\t ", iworkspace.arr[lop]);
              lino++:
              lop = aop+1; }
           11ma++;
    ) /* End WHILE (lop)*/
). /* End WHILE (sqlos) */
Sprintf(pra, "\a\a\t\t\t\t= MED =\f");
    tliste():
#1fdef CHBCHOUT
also {
   printf("\a\a00021 My oursor did not open!");
    emponeg();
int pratoci()
      pratcol() --- Print a list of all columns CREATED BY this
                           assessment sorted by table in which they occur
      Routine opens cursor U4 then fetches rows until SQL BOF is found.
Each row printed on the system printer. Then the cursor is closed.
      Note: Modifications to this function may impact the related
functions telisto(), telistf() and telisto() that open the
               cursor, fotch rows using it respectively, and close it
******************************
Sciofine PAGESTER SA
Tanded COMMERTERACE
define COMMETTERACE 48
                                                 /* Database Utilities Used */
int tolistf();
int teliste();
int i, j, k, line, lop, nop, page;
                                                 /* Counters for lines, etc.
char qual_col[31];
SLOUT("Printing tables and columns");
12 ( | talisto() ) {
                                                 /* Open "COL" DetaDict Guery */
   j = k = 0;
   page = 1;
   fprintf( prn, "\tlaventory of Columns by Table for %s\t\tPage %d",
            Assessmer.ness, page);
   stropy(qual_col, "q");
   while ( sqlca.sqlcode != sqL_mor ) {
```

if (tlistf() - SQL_BOF) break;

/# Get name of the next table #/

```
if ( line >= PAGMETER ) {
                                            /* Make sure that you have space */
           Sprintf(prm, "\f\tInventory of Columns by Table for %s\t\tPage %d\n",
                    ASSESSMENT. DEDG, + (page);
           1120 = 3:1
                                                 /* Print name of the table */
        if ( stracep (qual_col, tid.arr, (unsigned int) tid.les)) {
           fprintf(prm, "\m\m*4d to", ++j, tid.err);
           stropy(qual_ool, tid.arr);)
        else if (line = 3) fpristf(prm, "\m\m44d %s (Gost'd)", j, tid.arr);
                                              /* Print name of the column */
        fprintf(pra, "\a\t44d 4-15s ", ++k, aid.arr);
        lop = 0; /* Frint as many characters as the ocument field contains */
           (workspace.lea - 0) {
           fprintf(pra, "\a");
           14mo++; }
          while (lop < workspace.len) {
             map = (lap+commercerspace < workspace.lea) ?
                         lop+COMMUTERACE : workspace.lea;
             for ( ; sep > lep; sep--) /* Find good spot to end this line */
if (workspace.arr[sep] = ' ' ||
                    workspace.arr[nop] == '\0') break;
             if (lop == nop) ( /* In case we have a line without white space */
fprintf(prn, " ");
                 for ( ; acp < lop+commerspace; sop++)
                   fprintf(prm, "\t");
fprintf(prm, "\ta", workspace.arr(acp));
fprintf(prm, "\n\t\\t");
                   line++; }
             else { /* Horselly we can find a white space scmowhere */
workspace.arr[acp] = '\0';
                Sprintf(prm, "\t+s\m\t\t\t ", &workspace.arr[lop]);
                line++:
                lop = nop+1; 
               /* End WHILE (lop) */
         ) /* End IF (null string) */
       1120++;
    ) /* End WEILE (sqloa) */
fprintf(pra, "\a\a\t\t\t= EED ==\f");
    talista();
 Difdet CHRCHOTT
 alse (
   printf("\a\aooca! My oursor did not open!");
    exponency ();
   die
int pratabo()
/************************
      pratabe() --- Print ASAN's TABLE of CONTESTS
      Routine opens cursor US then fetches rows until SQL BOF is found.
Heat row printed on the system printer. Then the cursor is closed.
      Note: Modifications to this function may impact the related
              functions vlisto(), vlistf() and vlisto() that open the
              cursor, fotch rows using it respectively, and alose it
Odofine PACEGINE 54
Sundad COMMENTED ACT
#define COMMUNICACE 54
int i, j, line, lop, sop, page;
                                              /* Counters for lines, etc. */
int vlisto();
                                              /* Database Utilities Used
int viiotf();
int wlists():
```

if (tolistf() == SGL_ROF) break; /* Got name of the next column */

```
char fact, felock():
SLOUT("Printing ASAM's Table of Contents");
 now = aloak();
 1f ( | vlisto() ) {
                                              /* Open systeerlist query
   1 - 0;
   page = 1;

fprintf(prm, "\tinventory of ASAH Assosoments %s\tPage %d\n", now, page);
   11no = 2;
    thile ( sqlca.sqlcode != SQL EOF ) {
      if ( wlistf() - sqL mor ) break;
                                              /* Got the next assess
      if ( line >= PAGESINE ) (
                                              /* Make sure that you have space */
          fprintf(prm, "\f\tInventory of Assessments %s\tPage %d\n", now, ++page);
         line = 2;}
      fprintf(pra, "\a444 4-20s ", j, mid.arr); /* Assumes <= 20 char! */
      lop = 0; /* Print as many characters as the comment field contains */
       maile (lop < workspace.les) (
         map = (lop+consurrence < workspace.les) ?
                    lop+consultanace : workspace.len;
         for ( ; nap > lap; nap--) /* Find good spot to end this line */
if (workspace.arr[nap] == '\0') break;
         if (lop == nop) { /* In case we have a line without white space */
fprintf(prn, " ");
                                   -);
            fprint(prn,
for ( ; aop < lop+communame; aop++)
fprintf(prn, "to", workspace.arr[aop]);</pre>
                fprintf(prn, "\n\t\t\t ");
         alse { /* The normal case when we can find a white space somewhere */
workspace.arr[ncp] = '\0';
fprintf(prn, "4s\a\t\t\t ", &workspace.arr[lcp]);
             line++;
            lop = nop+1; }
         ) /* End WEILE (lop)*/
      ) /* End REILE (sqlos) */
   fprintf(pra, "\n\n\t\t\t\t= == -\f");
   vlista();
difdef CHECHOUT
alse (
   printf("\n\noocmi My oursor did not open!");
   exposeg();
Gendie.
intize -- Create standard set of ASAN Assessment tables.
      This file generates:
                                                            Cluster
      CLOSTERS:
                  OESO_CILUS
      TARLES:
                  R LDS
                                                            GEO CLUS
                  R LOWER
                                                            CENO CILUS
                   R LEO
                                                            GEO CLUE
                   R POT
                                                            CENT CENTS
                  MISSIONS
                  ACTIVITIES
                  OPERATIONS.
                  TAB MER MOD
************************
Sdefine SQLCA STORAGE CLASS extern /* Switch for header files
```

```
MINE SOL THELIDE SOLCA;
EXEC SQL REGIE DECLARE SECTION;
mmc sqt Declane inharris.h;
more son INCLUDE hostvars.h;
PORC SQL END DECLARE SECTION;
                                /* Standard MAN Header File
int intlso()
Create General Geographic cluster GEO_CLUS
Alfdef CHECKOVE
    printf("\mintleo ");
ches: *clock();
SLOTT("Reserving space for data");
HERE SQL CHEATE CLUSTER CROCKES (\mathbf{x} COORD ROBER, \mathbf{x} COORD ROBER);
Bittat CDECEDOS
  printf("\adeo clus tld", workspace.arr, sqlcs.sqlcode);
Bandif
if ( sqlom.sqloode && sqlom.sqloode |= DOFLICATE_OBJECT) {
  SLOUTED (sqlor.sqlorm.sqlormo);

fprintf(danto, "\nts %s\n\t\t\t Creating GEO_CLUS (ID = %d)",
     clock(), sqlos.sqlorms.sqlorms, ASSESMENT.id);
  return (int) sqlos.sqloods;}
Create table to receive data points of Ldm values
     Note: Only the clustered (X, Y) pairs are identified here. The
           computational routines will create the remaining (real)
           columns and decide at run time what their names will be.
EXEC SQL CREATE TABLE R LOS (
              X COORD NUMBER NOT NULL, /* X-Coordinate of Foint */
Y COORD NUMBER NOT NULL) /* Y-Coordinate of Foint */
              CLUSTER CHO CLUS (X COORD, Y COORD);
Biffor CHRONE
   printf("\nR_LDS *ld", sqlca.sqlcode);
Balsa
  SLOUT("Log and derivatives");
if ( sqlos.sqloods && sqlos.sqloods |= DOFLICATE_OBJECT) (
  SLOUTED (solon, solerum, solerumo) ;
  fprintf(dante, "\nts ts\n\t\t\t Creating Table R LDW (ID = td)",
     clock(), sqlca.sqlerm.sqlermc, Assessment.id);
  return (int) sqlos.sqloods;}
Create table to receive data points of Ldmar values
     Note: Only the clustered (X, Y) pairs are identified here. The computational routines will create the remaining (real)
           columns and decide at run time what their names will be.
*************
EXEC SQL CREATE TABLE R_LDGMR (
```

```
X_COORD STREET HOT HULL, /* X-Coordinate of Point */
Y_COORD STREET HOT HULL) /* Y-Coordinate of Point */
                CLUSTER GEO CLUS (X COCSD, Y COCSD);
Sifdef CHECKOUT
    printf("\aR LDER tld", sqlos.sqloods);
if ( sqlom.sqloode && sqlom.sqloode (= DUFLICHE_OBJECT) (
   SLOUIS (sqlos . sqlarm . sqlermo) ;
   fprintf(dente, "\m2s %s\m\t\t\t Creating Table R LDWGR (ID = %d)",
      clock(), sqice.sqlerms.sqlerms, Assessment.id);
   return (int) eqlos.sqloods;}
Create table to receive data points of Leq values
     Hote: Only the clustered (N,Y) pairs are identified here. The computational routines will greate the remaining (real)
             columns and decide at run time what their names will be.
EMBC SQL CREATE TABLE R LEQ (
               X COORD MUSEUM NOT MULL, /* X-Coordinate of Point */
Y_COORD MUSEUM NOT MULL) /* Y-Coordinate of Point */
               CLUSTRIA GRO CLUS (X_COCOD, Y_COCOD);
Diffet CERCEOUT
     printf("\mR_LBQ %ld", eqlos.sqloods);
Soudse
if ( sqloa.sqloode && sqloa.sqloode != DUFLICATE_OBJECT) {
   SLOUTER (sqlos . sqlorms . sqlorms) ;
   fprintf(dante, "\n*s %s\n\t\t\t Creating Table R LNQ (ID = %d)",
      clock(), sqlca.sqlerms.sqlermsc, Asstsmour.id);
   return (int) sqloa.sqloode;}
Create table to receive data points of pef values
     Note: Only the clustered (X,Y) pairs are identified here. The
             computational routines will create the remaining (real)
            columns and decide at run time what their names will be.
MODE SOL CREATE TABLE R POF (
               Y COORD STREET NOT NULL, /* Y-Coordinate of Point */
Y COORD STREET NOT NULL) /* Y-Coordinate of Point */
               CLUSTER GEO CLUS (X GOOSE), Y GOOSE);
#1fdef CHBCHOOT
    printf("\nR_PST %ld", oqlos.sqloods);
if ( sqlos.sqloode && sqlos.sqloode != DUPLICATE_CRIECT) {
   SLOUTED (sqlos . sqlorm . sqlorme) ;
   fprintf(dante, "\n*s *s\n\t\t\t Creeting Table R PSF (ID = *d)",
     clock(), sqlos.sqlerm.sqlerme, Assessmer.id);
   return (int) sqloa.sqloode; )
           MISSICMS: Missions Flows in this Assess
MINEC SQL CREATE TABLE MISSIONS (
```

```
MISSION
                          CHAR(7) HOT HULL, /* Mission Identifier
               TYPE
                          CHAR(1),
                                         /# Mission Type
                                          /* Description of Mission */
                          CHAR (60) .
               DESCR
               SORTIE SILE HUNGER);
                                          /* Number of A/C in sortie */
 difdef CHECKOTT
    printf("\mmissioss *ld", sqlos.sqloods);
   SLOUT ("Missions and Operations");
 Gendif
if ( sqloa.sqlooda && sqloa.sqlooda |= DUFLICATE_OBJECT) {
   ELOUTEP (sqlos . sqlorum . sqlorumd) ;
   fprintf(daste, "\nes ts\n\t\t\t Creating Table MISSIONS (ID = td)",
      clock(), sqlos.sqlorms.sqlorms, Assessment.id);
   return (int) sqlos.sqloode; }
       ACTIVITIES: Population of Sources by Mission by Aircraft
 EXEC SQL CHEATE TABLE ACTIVITIES (
              S LABEL CHAR(9),
M IDSET CHAR(7).
                                         /* Label of the "Source" */
                                         /* Identifier of mission */
               AIRCRAFT CHAR(12),
                                         /* Specific Aircraft Neme */
               ACTIVITY MOMBER);
                                         /* Internal Identifier
 difdef CHRCHOUT
     printf("\nAcTIVITIES %ld", sqlos.sqloode);
if ( sqlos.sqloods && sqlos.sqloods |= DUPLICATE OBJECT) {
   SLOUTER (sqlca.sqlcrm.sqlcrmc);
   fprintf(danto, "\n*s %s\n\t\t\t Creeting Table ACTIVITIES (ID = %d)",
     clock(), sqlca.sqlerm.sqlermc, Assessment.id);
   return (int) sqlos.sqloode;}
OPERATIONS: Number of day and night sorties by month
******************
EXEC SQL CREATE TABLE OPERATIONS (
              ACTIVITY NUMBER,
                                   /* Internal Miss/Aircraft/Route Tag */
                       HUMBER(2,0), /* Month for this entry */
HUMBER, /* Daytime Operations & */
HUMBER, /* Blokes Flying Hight */
DATE); /* When last modified */
              MODERN
                      HOMBER,
              DAY
                      HOMER,
              HIGHT
              LASTOPD DATE);
difdef CHECKOUT
    printf("\normalions %ld", sqlca.sqlcode);
if ( sqlca.sqlcode && sqlca.sqlcode != DOFLICATE_CBJECT) {
   SLOUTER (sqlos . sqlorm . sqlorme) ;
   fprintf (dante, "\m*s %s\n\t\t\t Creating Table OPERATIONS (ID = %d)",
     clock(), sqlcs.sqlerms.sqlerms, Assessment.id);
  return (int) sqlom.sqloode; }
MER FLIGHT PARAM: Flight permeters for each activity by segment
********************************
MINEC SQL CREATE TABLE MER PLICET PARAM (
```

```
/* Internal Miss/Aircraft/Route Tag */
          ACTIVITY
                                 /* MTR Navigation Point Id.
                   CHAR (12) ,
          FIX LABEL
                    CHAR(3),
                                 /* Reference for altitude
          ALT DEF
                                 /* Altitude segment is flown
/* Fower setting for the segment
          ALT
          PIER
                                 /* Speed at which it is flown
                    HURBER (3,0)); /* Sequence number of the new point */
fitter cocon
    printf("\min FLIGHT PARAM *ld", eqlos.eqloods);
if ( sqloa.sqlooda && sqloa.sqlooda != DUFLICATE_OBJECT) {
  SLOUTER (sqlcs.sqlcrrm.sqlcrrmc);
  fprintf (dante, "\n+s +s/n/t/t Creating Table MTR FLIGHT PARAM (ID = +d)",
     clock(), eqlca.sqlerm.sqlermc, Massacar.id);
  return (int) sqlos.sqloods;}
MER MED TAB: Tabulated Leg's for each activity. For the more
                 there is a single table. When segments can have
                 different flight peremeters the fate of this table
                 should be reviewed.
SHEC SQL CREATE TABLE MIR ENT TAB (SIDELINE number (5,0));
stropy(workspace.arr, "CREATE TABLE MIR EMP_TAB (SIDELIME number (5,0)) AS \
SELECT SIDELISE FROM SUPERUSER.MER EXP_TAR");
EXEC SQL EXECUTE Describing : workspace;
    printf("\nMTR_EXP_TAB %ld ", sqlos.sqloods);
if ( sqlos.sqloods && sqlos.sqloods != DUFLICATE OBJECT) {
  SLOUTER (sqlos . sqlorm . sqlorms);
  MINEC SQL DECLARE TI CURSOR FOR SELECT sideline FROM SUPERUSER.MER_MIR_TAB;
HOUSE BOL OFFER T1:
if ( sqloa.sqloode ) (
  SLOUTES (sqlos.sqlarm.sqlarmad);

Sprints (dante, "\n*s *s\n\t\t\t Opening MFR_EXO_TAB (ED = *d)",
     slock(), sqlca.sqlarms.sqlarms, Assessmer.id);}
  for (;;) {
     EXEC SQL FETCH T1 1270 :sideline;
     if (sqloa.sqloode) breek;
     EXEC SQL DESERT DETO mtr exp tab (sideline) VALUES (:sideline);
     if ( sqloa.sqloods ) {
       SLOUTER (sqlca.sqlerm.sqlermc);
        fprintf (dente, "\n*s *s\n\t\t\t Inserting Table MFR EXP_TAB (ID = %d)",
        clock(), sqlca.sqlarm.sqlarmc, Assessment.id);}
     RIEDC SOL COMMET WORK:
  ENDC SQL CLOSE T1;
* QUAL CIT1 and QUAL CIT2 Temporary tables for citation database queries *
************************
HUSC SQL CREATE TABLE QUAL_CIT1 (ontry_num char(5));
```

```
#1fdef CHRCHOUT
      printf("\agGAL_CIT1 %ld", sqlom.sqloods);
1f ( sqloa.sqloods 66 sqloa.sqloods != DUFLICATE_CBJECT) {
    SLOUTER (sqlca . sqlerm . sqlerma) ;
    fprintf (dante, "\nes to\n\t\t\t Creeting Table QUAL_CITI (ID = td)",
       slock(), sqica.sqierra.sqierrac, Assessmir.id);
    return (int) sqlom.sqloods; )
HORSE SQL CREATE TABLE QUAL_CIT2 (cotry_num char(5));
Gifdef CERCHOUT
     printf("\aggmaL_CIT2 %ld", sqloa.sqloode);
if ( sqlos.sqloods && sqlos.sqloods != DUFLICHTE_CRUTECT) {
    SLOTTEP (sqlca.sqlcrma.sqlcrmac);

Sprintf(dente, "lats ts/a/t/t Creating Table GUAL_CITE (ID = td)",

clock(), sqlca.sqlcrma.sqlcrmac, Assessment.id);
    return (int) sqlom.sqloods;)
return (int) sqloa.sqloode;
       missions.pc -- Routines for missions
       This file contains:
          pechgmis -- Set up routine to select a new mission
          pentrais -- Set up routine to select a mission and aircraft
                          combination for a given MTR
          externis -- Enter a mission for this assessment
          pentrilt -- Set up routine to process a mission and aircraft
                          combination for a given MTR
          permiss -- Set up routine for entering a new mission
          nutnispt -- Store as MTR Havigation Foint actually flows on a particular activity and advance all pointers.

incaispt -- Insert as MTR Havigation Foint actually traversed
                          during a particular mission in the detabase table
                          of MIR segments flown
          penddops -- Fut up the add operations window and accept data.
                    -- Expand steady yearly operations over all months.
                      -- Varify the existence of a mission as part of an
                         assessment's definition
                    -- Cancel mission currently pending on the database
-- Commit mission currently pending on the database
-- Connect an MTR with a Mission
          concris
          PATERIA
      ORACLE access routines:
        1. ...listo() Open Cursor (Opens a "logical file")
2. ...listf() Fetch Cursor (Reads next record from logical file)
...bunch() Fetch Cursor (Reads next bunch from logical file
                           applicable only for multiple choice options)
       4. ...lists() Close Cursor (Closes the logical file)
      WHERE:
       ... = ss - Numes of all Missions defined for this assessment
                      (multiple choice display option is supported)
       ... = so - Operations of a particular activity
#define SQLCA_STORAGE_CLASS extern /* Switch for header files
EXEC SQL INCLUDE SQLCA;
```

```
RESC SQL BEGIN DECLARE SECTION;
                                /* All sgL declarations are in
 BREC SQL INCLUDE hostwars.h;
                                /* those header files
 EIRC SQL INCLUDE Sakarris.h;
 HYDC SOL DED DECLARS SECTION;
 Singlede "near h"
                                /* Standard ASAN Rooder File
 static missflg = 0;
 pochquis -- Set up routine to select a new mission
     Boutise (1) opens cursor for fetch of all missions known (in this
               version missions are always local to the assessment)
            (2) fetches the first betch into memory
            (3) puts up "abgourstreareen"
 *************************
 int blakdspl(), sslisto(), sabunch(), roods;
 difdef CHECKOTT
printf("\mpschqmis ");
 Beads f
 MERRAMI (Screen, Rindow, Button, Datum); /* Save where you were when you */
 strapy (oldsarees, Sarees) ;
                                   /* called this "pseudo pop-up" */
blakdepl();
HEW_SCREEN ("obgain");
 MLOUT ("Retrieving list of missions");
roods = selisto();
return (reade ? reade : sebunch());
int postunie ()
pentrais -- Set up routine to select a mission and aircraft combination for a given MTR
٠
     Noutine (1) sets mission flags to false
            (2) puts up "spentimis"
missflg= 0;
stropy (tid.arr, ac asse.arr);
tid.len = ac name.len;
MEM_SCREEN("spentrmis");
return (int) 0;
int entermis()
.
         entermis -- Bater a mission for this assessment
*******************************
int roods;
world exposes ();
char *clock();
Sifdef CERCHOTT
  printf("\nestormis ");
if (ac_in_form <= 0) {
    SLOUTEP("? Sortic size");
  UPDATE DATOM("numec");}
misstype = toupper(misstype);
```

```
misdess.lem = strlem(misdess.err);
                                         type,
                                                    dosar.
                                                               sortie size)
MINEC SOL INSERT INTO missions baission.
                       VALUES (:misslabl, :misstype, :misdesc, :sc in form);
  printf(" tld", sqlos.sqloode);
if (roods = (int) sqlos.sqloods) {
   exposes ();
   fprintf(dente, "\nts entermis: ts", clock(), sqlca.sqlarm.sqlarma);
   EXEC OCL POLLBACK WORK;
   missflg = 0;}
   MINE SOL COMMET WORK;
   missflg = 1;}
MIN SCREEN (oldscreen) ;
HENVALS ():
return roc
int postrflt()
postrfit -- Set up routine to process a mission and
                        aircraft combination for a given MER
int canonis(); solisto(), solistf(), solistc(), vfyacutz();
woid empones ();
char *clock();
if (vfynostr(sc_neme.err))
                                   /* Do we know how to calculate this? */
   return (int) sqlos.sqloods;
if (imissflg) (
                                  /* Has a mission been entered? */
   SLOUTEF ("Please Select Mission First");
   return (int) SQL BOF; }
Bifdef CHECKOUT
  printf("\nPrevious? to to to", ordid.arr, missiabl.arr, ac_memo.arr);
BING SQL SELECT activity FROM activities INTO :activity
               NEERE S_LAREL = :srcid
AND M_IDENT = :misslabl
                 AND AIRCRAFT - : nd name;
distant CHRCHOUT
  printf(" = %ld (code = %ld)", activity, sqlca.sqlcode);
   SLOUTS ("ack");
Bondif
if (sqlos.sqloods - SQL_ROF) ( /* This is a unique combination */
  EXEC SQL SELECT MAX(activity) FROM activities ISTO :activity;
   #ifdef CHECKOUT
     printf("\mlast activity = %ld code = %ld", activity, sqlce.sqlcode);
   Bendif
   if (sqlos.sqloods)
     if (sqlos.sqloods - SQL_BOF) activity = 0;
     alse (
        fprintf(dente, "\ats Pastrfit2: 4s", aloak(), sqlam.sqlermac);
        return (int) sqloa.sqloods;}
  activity++;
  EDEC SQL DESERT DFTO activities (S_LABEL, M_DDEST, ADECRAFY, ACTIVITY)
VALUES(:srcid, :misslabl, :so_meme, :activity);
  Bifdef CERCHOUT
     printf(" Insert = %ld", sqlca.sqlcode);
     #LOUIS ("sok");
  Bondiff.
  if (sqlos.sqloods) {
     exposed ();
     fprintf(dante, "\nts PEntrflt3: 4s", clock(), sqlca.sqlerm.sqlermc);
     return (int) sqlom.sqloode;)
  curnavpt.arr[curnavpt.len = 0] = '\0';
  prenavpt.arr[prenavpt.len = 0] = '\0';
```

```
lptr1 = &curlowait.altitude;
    cptrl = curlowalt.units;
memvals();
    HER SCREEN ("mtrflt"):
 also f
    if (sqlos.sqloods) (
       fprintf(dexto, "\nes Partrfit1: %s", clock(), sqlom.sqlorms.sqlorms);
        concerts ();
       return (int) sqlon.sqloods;}
    solisto();
    if (sqloe.sqloods) {
         emponeg();
         sprintf(workspace.arr, "FAILED - %s", sqlca.sqlcrma.sqlcrmac);
         fprintf(dante, "\nes OPER %s", alock(), workspace.arr);
fprintf(dante, "\n\t\t\t Retrieving Operations for activity %ld",
                         activity);
         consomie ();
        return (int) sqlos.sqloods;)
    for (;;) {
       solistf();
       if (sqlos.sqloods) {
  if (sqlos.sqloods != SQL_BOF) {
              amponeg();
              sprintf(workspace.arr, "FAILED - %s", sqlos.sqlerm.sqlermso);
fprintf(dante, "\nts SHLECT %s", alook(), workspace.arr);
fprintf(dante, "\n\t\t\t Retrieving Month %d Operations for %ld",
                              active mo, activity);
              concents ();
              1
        break;
       ops[active_no-1].day = ops_day;
ops[active_no-1].aite = ops_nite;
    if (sqlos.sqloods - SQL_BOF) (
       solista();
       BONC SQL DELETE FROM operations WHERE activity = :activity;
       #1fdef CERCIOUT
          printf("\nPrevious data deleted %ld", sqlca.sqlcode);
          SLOUTP ("ack");
       Sandif
    alsa solista();
    ADD_HIMDOW("month", 7, 1);
    SLOUTS ("You already have data!");
return (int) 0;
int pensaion (nemo)
            penumish -- Set up routine for entering a new mission
      Routine (1) verifies that the new name is unique.
                (2) puts up the mission definition screen and starts it
*************
char name [];
char *clock();
int roods, melista(), mebunch();
void expense ();
Sifdef CEBCHOUT
printf("\npenumism ");
REMOVE WINDOW();
SLOUT ("Processing New Mission Request");
if (( roods = vfyThis(name)) != SQL_HOF) { /* Check for strange things */
   1f ( roods - 0) (
      sprintf(workspace.arr, "Sorry, but to already exists", name);
      SLOUTER (WORKSPROS. STE) ;
```

```
return (-1);}
  amponeg():
  fprintf(danto, "\nts Binomis: ts", alock(), sqlos.sqlorm.sqlorma);
  roturn roods: }
also (
                                  /* Close list of choices
  seliste();
                                 /* This is the new mission */
  stropy (misslabl.arr, a2bv.arr);
  misslabl.lon = m2bv.lon;
  misdesc.len = 0;
  misdesc.arr[0] = '\0';
  HEH SCREEN ("misspec");
  ENWYALS () ;
   mar DATOM ("misdaso");
                         Removed for possible conflict with V Dag */
  return (int) 0; }
int astmisst()
arthispt -- Store as MTR Newigetica Point actually flows on a
               perticular activity and advance all pointers.
register int 1;
int insutrot();
Bifdef CEECEOUT
printf("\maxtmispt ");
Bondie
if (linemispt()) {
    /* Advance the Hav Point Paremeters */
  for (i = 0; i < 3; i++) prenavpt.arr[1] = curnavpt.arr[1];
for (i = 0; i < 10; i++) prelowalt.spec[i] = curlowalt.spec[i];</pre>
  so pre spd = so car spd;
  as pre per - as our per;
  curnavpt.arr[0] = '\0';
  BENVALS () :
  MEXT_DATOM("oursevpt1");
return (int) sqlon.sqloods;
)
int insmisset()
insmispt -- Insert as MFR Navigation Point actually traversed
                 during a perticular mission in the database
**********************
register int 1;
Told exposes ();
#1fdef CENCEDOT
printf("\minemispt ");
stropy(m2bv.arr, sraid.arr);
stroat (m2bv.arr, curnavpt.arr);
n2bv.len = strlen(n2bv.arr);
fitseq += 1;
NINE SQL DESERT DITO MER PLICET PARAM
                     (ACTIVITY,
                               FIX LABEL,
                                            ALT REF.
                                                      ALF.
                                APD.
                                            SEQ)
                     PER.
             VALUES ( :activity, :n2bv,
                                            : optr1,
                                                       :lptr1,
                     :sc our per, :sc our spd, :fltseq);
Alfdef CHECEDOT
 printf(" Insert = 4ld", sqloa.sqloode);
```

```
Sendif
 if (sqloa.sqloode) {
    if (sqlca.sqlcode - EXISTS) SLOUTER ("Duplicate Batry");
    else exponsg();
canonis();} /* This is necessary since ORACLE automatically rolls back */
/* the inserts already done at this point ! */
 return (int) sqlos.sqloods;
 int ponddops (count)
      psaddops -- Put up the add operations window and ascept data.
 if (count = 1) ADD_WINDOW("daynite", 6, 1);
else if (count = 12) ADD_WINDOW("month", 6, 1);
else NLOUTP("PRAIDOPS called with bed argument");
 return (int) 0;
int exprops ()
 register int 1:
for (1 = 1; 1 < 12; 1++) {
   ops[1].day = ops[0].day;
ops[1].mite = ops[0].mite;}
return (int) 0;
ist vivinis (neme)
vrymas
                 -- Varify the existence of a mission as part
     Boutine looks in the assessment's MISSIONS table, loads mission
     into : aid and returns sqlam. sqloods for the query.
********************************
char zone[];
register int i;
#ifdef CRECKOUT
printf("\avfymis ");
Bendar
n2bv.len = strlen(neme);
for ( 1=0; 1 < n2bv.len; 1++)
n2bv.arr[i] = toupper(name(i]);
n2bv.arr[i] = '\0';
EXEC SQL SELECT mission
       FROM missions
             : aid
       HERE mission = :n2bv;
cid.err[cid.len] = '\0';
#1fdef CERCEDO?
  printf(" %ld ", sqlom.sqloode);
```

```
return (int) sqlos.sqloode;
int concess ()
               -- Cancel the mission currently pending on the datab
     Routine always issues a ROLLBACK
int postreut();
#1fdef CENCHOUT
printf("\nonnomis ");
Bendt #
MIND SOL BOLLBACK WORK;
Bifdef CHECKOOT
  printf("%ld", sqloa.sqloods);
Condif
sprintf(workspace.arr, "Entry for mission hs CARCHLLED", misslabl.arr);
SLOUISE (workspace.arr);
missiabl.orr[missiabl.len = 0] = '\0';
postront();
return (int) sqlos.sqloods;
sevenis -- Commit the mission currently pending on the detabase
int mtrtabl(), postront();
#1fdef CMBCROUT
printf("\neavenie ");
for (active mo = 1; active mo < 13; active mo++) {
    ops_day = ops[active_mo-1].day;
    ops_nite = ops[active_mo-1].mite;</pre>
    EXEC SQL IMPERT INTO operations ( ACTIVITY, MONTH, DAY, MIGHT, LASTURD)
            VALUES (:activity, :active no, :ope day, :ope nite, SYNDATE);
   if (sqlos.sqloode) {
      ESTOCKES :
      sprintf(workspace.arr, "FAILED - %s", sqloa.sqlorm.sqlormad);
fprintf(dante, "\n%s INSERT %s", clock(), workspace.arr);
fprintf(dante, "\n\t\t\t Storing Operations %d %ld",
                    active mo, activity);
      MINE OUL BOLLBACE BORE;
      postrest();
      return (int) sqlom.sqloods;)
EXEC SQL COMMIT BOSE;
mtr_tabl();
pentreat();
return (int) sqlog.sqloode;
int Misconn (name)
/****************************
```

```
MISCOUR -- Connect as MrR with a Mission
        Routine SHLECTS the Mission from the database and loads parameter
block. Returns an error code which indicates whether or not
        the SELECT was successful.
        Note: The existence of the mission on the database is assumed.
               SQLCB.SQLCCCE is returned and if nonzero an error
               message is displayed on the status line.
 ********************************
 char nemo[];
 register int 1;
 int MEN SCREEN(), HENVALS(), SLOTT();
 char *clock();
 Sifdef CHRCHOUT
  printf("\mMIScoon ");
 SLOUT ("Retrieving Mission");
 a2bv.lea = strlea(asse);
 for (i = n2bv.lea; i >=0; i--) n2bv.arr[i] = neme[i] = toupper(neme[i]);
 EXEC SQL SELECT mission, type, descr, scrtie_size
         FROM missions
DRTO :missiabl, :misstype, :misdesc, :ac_in_form
          WHERE mission = :n2bv;
 Bifdaf CERCEOUT
  printf("%ld ", sqlom.sqloods);
                                          /* Everything is O.E. */
 if (isqlea.sqloods) {
   misslabl.arr[misslabl.len] = '\0';
   misdesc.arr[misdesc.len] = '\0';
    seliste();
   misselly = 1;
   HEWVALS () :
   HER SCREEN (oldscreen)
               /* This should never happen! But, .... */
   missflg = 0;
   PERDOMAGO:
   sprintf(workspace.arr, "FATLED - %s", sqlcm.sqlcrma.sqlcrma);
fprintf(dante, "\n%s SELECT %s", clock(), workspace.arr);
fprintf(dante, "\n\t\t Retrieving Missice %s", a2bv.arr);)
return (int) sqlos.sqloods;
int selisto()
salisto --- Open cursor $1 for a list of missions that
                      belong to the current assessment
     Routine executes an open cursor command for cursor $1 and then
     returns to the calling progress with the CRACKE status code.
     Note: Modifications to this function may impact the related
              functions solistf(), sebunch() and solistc() that fetch
              rows and close the cursor and, possibly, functions that
              call these utility routines.
*************************************
Difdef CHECKOUT
printf("\msslisto ");
 andi f
MINEC SQL DECLARE SI CURSOR FOR SELECT mission
                           FROM missions ORDER BY mission;
MINE SQL OFFER $1;
difdet CEECEOUT
printf(" Open: %ld ", sqlom.sqloode);
```

```
return (int) sqloa.sqloode;
int selistf()
      selistf --- Fotch a row using the opened cursor $1 for missions
     Routine executes an fetch command for cursor $1, which is assumed
     to have been opened, and them returns to the calling progrem with
     the CRACES status code.
     Note: Modifications to this function may impact the related
             functions selisto(), sebunch() and selista() that open,
             fetch groupwise and close the cursor and, likely,
             functions that call these utility progress
*************************
DERC SOL PERCH S1 DFFO :misslabl;
misslabl.arr[misslabl.lem] = '\0';
difdef CHECKOUT
printf(" Fetch: $1d ", sqlos.sqloods);
Gendis
return (int) sqlog.sqloods;
int sebunch ()
--- Fetch a bunch (20 or whatever the size of deplault)
                  using the opened cursor $1 for mission list
     Routine executes an fetch command for cursor $1, which is assure
     to have been opened, and then returns to the calling progrem with
     the CRACLE status code.
     Note: Modifications to this function may impact the related
             functions selisto(), selistf() and selista() that open,
             fetch and close the cursor and, likely, functions that
             call these utility progress
register ist 1;
int arous, arous, roods;
char *clock();
EXEC SQL PETCE S1 1270 :deplamit;
arows = (int) sqlca.sqlarrd[2];
mrows = (sixeof deplumit) / 34;
roode = (int) sqloa.sqloode;
difdef CHECKOUT
printf(" seBuach: %ld returns %d of %d rows", sqloa.sqloods, arows, arows);
Bendif
if ((roods = sgL FETCE OUT OF ORDER) || (roods = sgL EOF)) {
  if ((roods = sgL EOF) && (arows > 0)) {
     for (i = 0; i < nrows; i++) dsplanlt[i].arr[dsplanlt[i].lem] = '\0';
     if (arous < arous)
       for (i = arous; i < arous; i++) deplualt[i].arr[0] = '\0';
     HENVALS ();
     SLOUTS ("The last mission in the list is on the screen"):
  else {
     MENVALS ();
     SLOUTS ("You are already as far down in the list as you can go"); }
alse {
  if (roode) {
     ENDOMES;
    fprintf(dante, "\nts sssusce: ts", clock(), sqlcs.sqlerms.sqlerms);}
  MENVALS();}
return roode;
```

```
int seliste()
 seliste --- Close cursor 21 for mission list
      Routine executes a close cursor command for cursor $1 and then
      returns to the calling program with the CRICIE status code.
     Note: Modifications to this function may impact the related
             functions selisto(), sebunch, and selistf() that open the
             cursor and fotch rows using it and, possibly, functions
             that call those utilities
 Diffet CERCEOUT
 printf("\mosliste ");
 Bonds &
 BURG SQL CLOSE S1;
 BARRAS CHICKOTTE
 printf("Close: tld ", sqlos.sqloods);
 Seadle
 return (int) sqlom.sqloode;
int solisto()
 Open cursor $2 for a list of operations that
                   belong to the current activity
     Routine executes an open cursor command for cursor 82 and then
     returns to the calling program with the CRACLE status code.
     Note: Modifications to this function may impact the related functions solists() and solists() that fetch rows and
            close the cursor and, possibly, functions that call
            these utility routines.
*******************************
printf("\msolisto ");
Bondse
EXEC SQL DECLARE S2 CURSOR FOR SELECT month, day, might, lastupd
            FROM operations REERE activity = :activity ORDER BY month;
difdef CHECKOOT
printf(" Open: %ld ", sqlos.sqloode);
#endif
roturn (int) sqlos.sqloods;
solistf --- Fetch a row using the opened oursor #2 for operations
     Routine executes an fetch command for cursor $2, which is assumed
to have been opened, and then returns to the calling program with
the CRACLE status code.
    Note: Modifications to this function may impact the related
            functions solisto() and solisto() that open and close
            the cursor and, likely, functions that call these utilities
************
EXEC SQL FETCH 82 DETO :sotive_mo, :ops_day, :ops_mite, :timest2;
```

```
timest2.arr[timest2.lea] = '\0';
 Gifdef CHECKOUT
 printf(" solistf: %ld ", sqlom.sqloods);
 Bonds #
 return (int) sqlos.sqloods;
 int solista()
 solists --- Close cursor $2 for operations list
     Noutine executes a close cursor command for cursor $2 and then
     roturns to the calling program with the CRACLE status code.
    Note: Modifications to this function may impact the related
             functions solisto() and solistf() that open and fetch
             rows from the cursor and, possibly, functions that call
             these willities
 printf("\msoliste ");
 Bondif
EXEC POL CLOSE 82:
Bifdef CERCEOUT
printf("Close: *ld ", sqlos.sqloode);
 return (int) sqlom.sqloode;
/**********************************
     mtr.pc -- Routines calculating noise exposure from MTRs.
     This file contains:
     isperpen - Return distance of point to line if perpendicular is
                 inside line segment, NULL otherwise
                 Got the 2-parameter SEL distance approximation for
                 an aircraft
     mir seel - Calculate the Single Event Exposure Level for an MTR
     mir tabl - Calculate the noise/distance table for an MTR segment
                 when the computational parameters have been loaded
            - Connect an assessment to an MTR
*******************************
dinclude (process.h)
                                 /* Reader for calls to ME-DOS
#include <stdio.b>
finclude deth.h>
#define SQLCA_STORAGE_CLASS extern
                                 /* Switch for header files
EXEC SQL REGIS DECLARE SECTION;
                                 /* All SQL declarations are in
EXEC SQL INCLUDE hostvars.h;
                                 /* these header files
EXEC SQL DECLIDE faharris.h;
VARCEAR rowid[25]:
HORE OOL MED DECLARE SECTION:
MINE BOL INCLUDE BOLCA:
                                 /* Standard ASAN Hondor File
double delta_pwr;
                     /* Global: adjustment for notual power setting
double delta_spd;
                     /* Globel: adjustment for actual sircraft speed */
double 10, PTO:
                    /* Global: coordinates of point of observation */
                    /* Global: coordinates of a segment and point */
/* Global: coordinates of a segment and point */
double Mi, FY1;
double 12, 12;
double isperpes ()
/*****************************
         isperpes -- Routine to determine if the perpendicular of
```

```
point (E0,PYO) to a line segment (E1,PYI)-(E2,YZ) * falls inside the line segment. *
       Routine performs a translation of the coordinate system so that
        (EO. PTO) is at the origin of the new coordinate system. It then
        rotates this new coordinate system around (NO, PYO) to a second
        now coordinate system in which the X-axis is perallel to the line
        segment. If the perpendicular to the line segment is inside the
segment, then in this coordinate system the X-coordinates of the
        end points of the segment will have different signs. In this
        system, the absolute value of the Y-coordinate of either point is
        the distance from the point to the segment.
       Botes: 1. If the I'' value (in the second coordinate system)
                        is positive, a person moving from (XI, NYI) to (XZ, YZ) will observe (XD, NYO) as being to his/her right.
                   2. The original coordinates are (XI, PYI), etc.
                        The translated coordinates are (Kip, Yip), etc.
                        The translated and rotated coordinates are (Xidp, Yidp)
                         etc. to minic the usual notational convection of
                        primed and double-primed coordinate pairs.
 double Mp0, Mip, M2p, Mp0, Mip, M2p;
double Mdp0, Midp, M2dp, Mdp0, Midp, M2dp;
 double sqrt();
 double hypothenuse, sinotheta, cosinetheta;
Sifdef CENCHOOF
printf("\misporpen ");
 Bendif
hypothemuse = sqrt( (12 - 11) + (12 - 21) + (12 - 21) + (12 - 21) );
sinotheta = (X2 - X1) / hypothenuse;
cosinotheta = (X2 - XX1) / hypothenuse;
Mip = M1 - M0;
Yip = FY1 - FY0;
Yip = X2 - Y0;
12p = 12 - 210:
Hidp = Hip * cocinetheta + Yip * sinetheta;
Yidp = -Hip * sinetheta + Yip * cocinetheta;
Hidp = Hip * cocinetheta + Yip * sinetheta;
Yidp = -Hip * sinetheta + Yip * cocinetheta;
difdef CHECKOUT
printf("\nsin = $7.5f Cos = $7.5f Hyp = $6.2f",
         sinetheta, cosinetheta, hypothenuse);
Printf("\nX' = (45.1f, 45.1f) X' = (45.1f, 45.1f)", XI, YI, X2, X2);

printf("\nX' = (45.1f, 45.1f) Y' = (45.1f, 45.1f)", XI, YI, X2, X2);

printf("\nX' = (45.1f, 45.1f) Y' = (45.1f, 45.1f)", XIp, XIp, XIp, XIp);

printf("\nX'' = (45.1f, 45.1f) X'' = (45.1f, 45.1f)", XIdp, XIdp, XIdp, XIdp);
Bend1f
return ( ( (25.dp > 0) && (22.dp > 0) ) ||
( (25.dp < 0) && (32.dp < 0) )
           7 BULL
           : fabs (Y2dp) );
}
int g_mtreel()
          g_mtrsel -- Routine to get the MTR two-persmeter approximation
                            to the SEL - Distance curve from the detabase
       Routine selects the proper profile from the detabese and loads
       the host variables. It returns the sqlos.sqloods of the select.
         Note: An error will result if the entries in the detabase are
                  not unique! At this time no provision is made for a
                  pick-and-choose approach to MEL profiles.
```

```
int temp;
Siffed CHECKOUT
printf("\mg_mtr_sol ");
BING SQL SHLECT power units, power, power slope, intercept, speed
                                    :pwr scale
               :per slope, :per intopt, :pr speed
               streeltab
        PROM
        REERS aircraft = :ac ame;
#1fdef CHECKOTT
fprintf(prn, "\nts tlf ts speed = tlf, sqloode tld\f",
ac name.arr, pr power, pr pwr u.arr, pr speed, sqlca.sqlcode);
printf("lid", sqlca.sqlcode);
Sondie.
return (int) eqlos.eqloode;
double mtr_seel (lateral)
mtr_seel -- Routine to calulate moise exposure at a point that
                   is lateral to an MFR for a SIRGLE specific activity
                   on that METR. (Operational adjustments not made.)
double lateral;
                              /* Lateral distance to track */
double log_magle;
                              /* LOGIO (angle above the horizon)
double osset;
                                                             */
                              /* Rise time parameter
double caset pen;
                              /* Penalty assoc'd therewith
double seledj;
                              /* SEL adjusted for power and speed */
double stant(), log10(), pow(); /* math.h routines used
          /* Calculate "Pure" Propagation-adjusted SEL */
Bifdef CHRCHOUS
  log_angle = 1.750122632 + log10(atan2(ac_alt, lateral));
caladi
        - pwr intopt
           + pwr_slope * ( 0.5 * log10 (ac_alt*ac_alt + interal*interal) )
           + delta pur
                                     /* Fower Adjustment
           + delta_spd
                                      /* Speed Adjustment
           - (log_angle < 1.477121255 7 /* Ground adjustment if < 30 deg */
                 (6.995 - 6.606 * log_angle
                      + 1.566 * log_angle * log_angle) : 0.0);
           /* Calculate Rise Time Penalty */
onset = 100.0 / (1+ pow(2.7163, 10.01 - 3.62 * log10(ac_speed)
                            + 2.48 * log10 (ac_alt)
                            + 0.15 * log10(lateral)
                             - 0.0542 * seledj));
                     oaset_pen = 0.0;
oaset_pen = 16.6 * log10(oaset/15.0);
oaset_pen = 5.0;
if (caset < 15.0)
else if (osset <= 30.0)
 fprintf(prm, "seledj %10.41f caset %10.41f", seledj, caset);
Sendir
return (saladj + caset_pen);
```

int mtr_tabl()

```
mtr_tabl -- Routine to calulate noise amposure - perpendicular
                    distance table (MTR_END_TAB) for a specific activity *
*******************************
NOTE: This routine currently assumes that operations persenters ***
              are fixed over an MTR. It must be changed when that is see to longer true. Also INTLEE PC must then be changed!
 ***
**************************
**************************
char *aloak();
int alisto(), alistf(), alista(), i;
                      /* Finds profile for this siroreft
      g mtrsel();
double mtr_seel();
                            /* Single event calculation routine
 wold emponeg();
SLOUT ("Calculating METR Exposure Table");
stropy(tid.orr, "MIR_EMP_TAB");
tid.len = 11:
sprintf(a2bv.arr, "ACT404ld", activity);
n2bv.loa = strlea(n2bv.arr); /* Just in case activity > 9999 */
This quary only computes things for the 1st segment. If we start
    allowing different operations parameters per segment, then this
    must be changed. Also see the note in INTLEE, PC!
*************
          MINO: alt, per, spd FROM
DETO: ac_alt, :ac_powar, :ac_speed
MINES activity = :activity AND seq = 1;
MORE SQL SHIREY alt.
                                          FROM mtr_flight_perms
Sifdef CHECKOUT
  printf("\maircraft is $1f, $1f Ers, power = $1f sqloods = $1d",
  as alt, as speed, as power, sqlss.sqloods);
Sprintf(prs, "\akirsrsft is *lf, *lf Ers, power = *lf sqloods = *ld",
            sc_alt, sc_speed, sc_power, sqlca.sqlcode);
Beadle
clisto(); /* Open detabase cursor */
for (;;) {
   alistf();
             /* Fetch the next instance */
   if (isqlos.sqloods) {
     cid.arr[cid.len] = '\0';
     if (!stromp (cid.arr, n2bv.arr)) breek;
also cid.arr[0] = '\0'; cid.len = 0;}
                                               /* Have it already! */
                                              /* No, not that one */
/* Have to greate it */
   else if (sqlos.sqloods - SQL BOF) break;
  } معده
                                               /* Trouble!
     fprintf(dante, "\nts ts", clock(), sqlca.sqlerrm.sqlerrmc);
fprintf(dante, "\n\t\t\t Retrieving MTR_EMP_TAB ts", n2bv.crr);
     SLOUTEF ("Calculation Aborted");
     closeCRA();
     return (int) sqloa.sqloods; )
alista();
              /# Close database carsor #/
if (!cid.lon) {
                         /* Create a new column in the table */
  sprintf(workspace.arr, "ALTER TABLE MTR END TAB AND (4s MORMER) ", m2bv.arr);
   workspace.len = strlen(workspace.arr);
  difdef CHECKOUT
     printf("\n*s", workspace.arr);
fprintf(prn, "\n*s", workspace.arr);
  Bendiff
  MIEC SQL EXECUTE DESIDIATE : workspace:
  Sifes CHECKOTE
     printf("\nAlter Table ts &ld", n2bv.arr, sqlca.sqlcode);
     fprintf(prn, "\nAlter Table ts &ld", n2bv.arr, sqloa.sqloode);
  Pendif
  if (sqlos.sqloods) (
     exposes ();
     fprintf(dante, "\make %s", clock(), sqlca.sqlerrm.sqlerrmc);
fprintf(dante, "\n\t\t\t Creating MTR_EMP_TAB %s", n2bv.arr);
    SLOUTED ("Calculation Aborted");
```

```
closeORA():
       return (int) sqloa.sqloods;
    sprintf (workspace.arr,
     "COMMENT ON COLUMN META EXP TAB.4s IS 'Operations on 4s by 4s on mission 4s'",
    nibv.arr, sraid.arr, ac nome.arr, misslabl.arr);
    workspace.len = strlen(workspace.arr);
    Olfdef CARCHOUT
      printf("\nes", workspace.err);
    EXEC SOL EXECUTE DESEDIATE : workspace;
g streel();
 delta_pwr = (ad_power - pr_power) * pwr_scale;
delta_spd = 10.0 * log10(pr_speed / ad_speed);
 sprintf (workspace.arr,
     "SHIRCT rowld, sideline, to FROM mir emp tab FOR USDAME OF to",
     a2bv.arr, a2bv.arr);
 workspace.lea = strlea(workspace.arr);
 Bifdef CONCROST
   printf("\aPREPARE %s", workspace.arr);
 Bondif
EXEC SCL PREPARE D1 FROM : workspace;
Bifdof CHBCKOUT
   printf("\n returns %ld", sqlca.sqlcode);
    fprintf(prn, "\nts returns tld", workspace.arr, sqlos.sqloode);
 Bendif
 EXEC SQL DECLARE C1 CURSOR FOR D1;
 EXEC SQL OFFE C1;
Sifdef CHECKOUT
   printf("\nopen returns %ld", sqlon.sqloods);
fprintf(prn, "\nopen returns %ld", sqlon.sqloods);
Beadif
for (;;) (
ENGC SQL FETCE C1 DETO :rowid, :sideline, :amposure;
      printf("\nFetch sideline %if returns %id", sideline, sqloa.sqloode);
       foristf (pra.
       "\nTotok sideline %lf returns %ld", sideline, sqlos.sqloode);
      adif
   if ((sqlos.sqloods) 66 (sqlos.sqloods != HULL_FETCHED)) break;
         rure = mtr seel(sideline);
   if (rowid.les (= 18) (
      fprintf(pra, "\nrowid length = %d", rowid.len);
      round.len = 18;
   sprintf (workspace.arr,
          "UPDATE MIR EXP TAB SET to = tif MESSE rowid = 'ts'",
          m2bv.arr, exposure, rowid.arr);
   workspace.lan = strlen(workspace.arr);
   EREC SQL EXECUTE DESCRIPTE : workspace;
   Sifdef CHECKOUT
      printf("\n4s RETURNS 41d", workspace.arr, sqlca.sqlcode);
       fprintf(prn, "\nEXE Des to RETURNS tld", workspace.arr, sqlca.sqlcode);
if (sqlca.sqlcode == SQL_BOF) ( /* We finsished the list */
   MENC SQL COMMIT RORE;
   expCmsg();
fprintf(dante, "\n** *s", clock(), sqlca.sqlerm.sqlermc);
fprintf(dante, "\n\t\t\t Fetching MTR_EXP_TAB for activity *ld *lf",
             activity, sideline);
   EREC SQL BOLLBACK WORK;
MUNIC BOL CLOSE C1:
int MTRoom (nome)
          MTROOM -- Connect an ASAN assessment with an MTR
```

150

```
Boutine SELECTS the MTR from the database and loads paren
        block. Returns an error code which indicates whether or not
        the SHURCE was successful.
        Note: The existence of the MTR on the detabase is assumed. If
               may SQL error is found, the routine returns sqloe.sqloods
               with an error on the status line. When the MIR exists
               the MTR Date Entry Screen will be displayed. To varify
               the existence of an MER use vfymtr().
 ***********************
 char sees [1:
 register int i:
 ist HEW_SCHEEN(), HERVALS(), SLOUT(), SLOUTSP();
 cher *clock();
 Diffel CHECKOT
   printf("\nmmacoon ");
 Bonds &
 SLOUT("Switching MERS ....");
 n2bv.len = strlen(nene):
 for (i = m2bv.lem; i >=0; i--) n2bv.arr[i] = neme[i] = toupper(name[i]);

menc sqn smincr label, status, type, descr, orig, sched, owner,

70_CEAR(date_pub, 'dd-Mon-yyyy'),
                 TO CHAR (timestamp, 'dd-Mon-yy HH24:MI:88')
          FROM SOUTONS
          DIFO :srcid, :srcstat, :srctype, :srcdesc, :srcorig, :srcsched,
                 :sroower, :sropdate, :sroedate
          WHERE label = :n2bv AMD type = '1';
 Bifdef CERCEOUT
   printf("%ld ", sqlos.sqloods);
 if (isqles.sqloods) {
                                           /* Everything is O.E. */
    sraid.arr[sraid.len]
                             = '\0';
   srodesc.arr[srodesc.len] = '\0';
sroorig.arr[sroorig.len] = '\0';
   srosched.arr[crosched.les] = '\0';
   stropy(lastmir.arr, sroid.arr);
lastmir.lea = sroid.lea;
   melista();
   mintrist ();
   MEN SCREEN ("mtratry");
   MENVALS ();
   12 ((srestat != 'A')) {
      sprintf(workspace.arr, "Bote: Status of this MER is \"tc\"", srostat);
SLOUTES (workspace.arr);}
olse (
              /* This should never happen! But, .... */
   ENDONESS:
   sprintf(workspace.arr, "FAILED - %s", sqlca.sqlarm.sqlarmac);
   if (sqlos.sqloode != sqL_mor)
                                  SLOUTEP (workspace.arr);
   alse SLOUTES ("This MIR exists but is not available to you");
   fprintf(dante, "late SMLECT to", clock(), workspace.arm);
fprintf(dante, "lattlt Retrieving MFR to", n2bv.arm);}
return (int) sqlos.sqloode;
screensa.pd -- Routines to set up the screens for assessments.
      This file contains:
      Loggedon
               - Answers the question: "Did the planner log on?"
               - Futs up database housekeeping sureen
      pedbheek
      pachgass
                - Futs up change assessment screen
      penwasea
                - Puts up now assessment screen
      peprobet
                - Puts up problem status sureen
      blnkdepl - Blanks out the common display area
finclude oprocess.h>
                                      /* Header for calls to MS-DOS
#include <stdio.b>
Medine SQLCA STORAGE CLASS extern /* Switch for header files
RESIDE SQL INCLUDE SQLCA;
```

```
/* All SQL declarations are in
EXEC SOL REGIN DECLARE SECTION;
HIMC SQL INCLUDE hostwars.h;
                                              /* those header files
MINE OUL INCLUDE Scharris.h;
MINC SQL MED DECLARE SECTION;
                                              /* Standard ASAN Seeder File */
Sincindo "ngon h"
int loggedon ()
/***************************
                         Boutine to determine if the planner filled in the
                            scarness on the first corees.
Sdofine CHAR MERO 'O'
cher *clock();
int i, j, closecona();
Sifdef CHECKOTT
printf("\nloggedon ");
HEEREMI (Screen, Window, Detwn, Button);
$1fdef CERCEOUT
printf("called from %s", Screen);
plantnem.lea = strlea(plantnem arr);
                                                   /* Who is this person? */
for (i = 0; i < planram.len; i++) {
   if (planram.arr[i] > CEAR_RERO) break;
     for (j = 0; j < planmem.lea; j++) planmem.arr[j] = planmem.arr[j+1];
)
#1fdef CESCHOOT
printf(" Username = 4s is 4d characters", planmam.arr, planmam.lea);
Bonds #
if ( plearnem.lea == 0 ) { /* Did not enter a name! (or we lost it) */
if (stromp(Screen, "firstscreen")) {
       SLOUTS ("TROUBLE! ASAH has forgotten your name....");
      SLOUPS ("TROUBLE! ARAM has forgotten your name....");

fprintf (dante, "\n\t\t\t ASSESSMENT.name was *s", ASSESSMENT.name);

fprintf (dante, "\n\t\t\t n2bv.nrr was *s", ASSESSMENT.name);

fprintf (dante, "\n\t\t\t n2bv.nrr was *s", n2bv.nrr);

fprintf (dante, "\n\t\t\t Surean *s", Surean);

fprintf (dante, "\n\t\t\t Datum *s", Datum);

fprintf (dante, "\n\t\t\t Datum *s", Datum);

fprintf (dante, "\n\t\t\t Button *s", Button);
       MEN SCREEN ("firstscreen");
       aloseCRA();
      exit (255) ;
       return (int) 255;
      SLOTTO ("I don't know yet who you are. Flease enter your asme");
      UPDATE DATUM("planmen");
      VCAPITAL (&planamen) ;
      ADD_WIEDOW("password", 15, 3);
       UPDATE DATUM("password");
      WCAPITAL (&password) ;
      REMOVE WINDOW();
      1
   return (int) SQL BOF;
roturn (int) 0;
pedbhsak -- Set up routine for housekeeping screen
      Routine (1) makes sure that user is known
```

and the second s

```
(2) makes an entry in the sadit file
             (3) puts up "dbksolipgscreen"
************************
int closeORA(), loggedon();
cher *clock();
loggedon ();
Sprints (dente,
"\a\n\n*s Padelsen: %s signed on as SUFERUSER for File Maintenance\n\n", clock(), plannam.orr);
if (stromp(ASSESSMENT.name, "SUPERUSER") ) {
   12 (SUCCOR ()) {
     Sprintf(dante, "to PEDRESEK: SUPERUSER connect failed\a\a", clock());
     SLOUTED ("SUPERUSER access dealed. Not good.....");
     GloseORA();
     emit (256) ;
     )
NEW SCREEN ("dbhsekpgscreen");
rotum 0;
peobgass ()
          pechase -- Set up routine for change assessment sur
     Routine (1) opens cursor for fetch of ORACLE usernames
(2) fetches the first batch into memory
             (3) puts up "chgourasscreen"
int blakdspl(), slisto(), ubunch(), roode;
difdef CEBCECOT
printf("\npschgass ");
Boarise
blakdepl();
MEW SCREEN ("chagurasscreen"):
SLOUT ("Retrieving ASAH's table of contents");
roode = ulisto();
if (iroods) roo
return roode;
int penusen(nema)
          penuasen -- Set up routine for new assessment ser
     Routine (1) varifies that the new name is unique.
             (2) creates the new CRACLE user and tables for this assessment.
     Notes: 1. When routine determines that it is stuck, closeCRA
                is called to terminate the execution.
              2. Execution is terminated when this routine is called
                without being connected to CRACLE. (One should not be able to get casself into this predicement.)
cher acmo[];
int roods, ASAMconn(), intlse(), arolloga(), SUccen();
int ulisto(), ubunch(), ulisto();
woid emponing();
Sifdef CHECKOUT
```

```
printf("\nponwasen ");
 Seadif
    OVE WILDOW();
 SLOUT ("Processing New Assessment Request");
 if (( roods = TfyOid(name)) |= SQL_BOF) { /* Check for strange things */
    if ( roods - NOT LOGGED ON ) | roods - SQL MAD LOGGE) (
       sprintf (workspace.arr,
          "PSnewass: You are not connected to CRACLE! -- FATAL");
       SLOUTS (workspace . arr) ;
       fprintf(dante, "\nts 4s", clock(), workspace.arr);
       exit (255);}
    if ( roode - 0) {
       sprintf(workspace.arr, "Sorry, but 4s already exists", name);
       SLOTTES (workspace.arr);
       return (-1);}
    emponeg();
    return reode; )
 also {
                         /* This is where you land when everything is O.E. */
    mlisto();
                                    /* Close the list of choices */
    roods = nrollORA(name);
                                    /* Try to get this one added */
    af ( roode ) {
       sprintf(workspace.arr, "FAILED -- ts", sqlos.sqlorms.sqlorms);
       fprintf(danta, "\a*s %s FAILED to enroll", clock(), nems);
fprintf(danta, "\a\t\t\t %s", sqlos.sqlorm.sqlorms);
       if (flooms()) {
          sprintf( workspace.arr, "FSHWASEE stuck: to!",
               sqlos.sqlerm.sqlermo);
          SLOUTES (workspace.arr);
          fprintf(dente, "\ntsPERFEARER stuck: SUPERUSER re-connect failed",
                  slock());
          fprintf(dante, "\n\t\t\t *e", sqlce.sqlerme.sqlerme);
          alossORA();
          axit (255) ; }
       if (|ulisto()) (
                                    /* Recover by reinitializing screen */
          sbunch ();
          MERVALS (): )
       if ((roods - SQL_BAD_LOGOS) || (roods - NO_IDESTIFIED_BY)) (
          sprintf (workspace.arr,
             "FATLED -- Are there perhaps spaces in \"ts\"?", meme);)
       SLOUTEP (workspace.arr);
                                  /* arollORA() executed O.E. Heat */
    else {
       if ((intlse()) return 0; /* create the ORACLE tables needed */
       difdef CHECK
         printf("\nScmething major is wrong. Code = 4d", roode);
       Bondie
       SLOUTER ("Initialization terminated abnormally");
       SLOOTS (sqlos.sqlerm.sqlerme);
       SLOUTP ("This should be fixed before entering data");
       fprintf(dante, "\nts Initialization did not complete normally", clock());
       fprintf(dante, " due to\n\t\t\t *s", sqlca.sqlerum.sqlerumc);
      fprintf(dante, "\n\t\t\t This problem should be fixed before proceeding");
fprintf(dante, " with\n\t\t\t data entry for %s", name);
, ,
int peprobet ()
      peprobet
                      Routine to set up the ASAN Status Screen. This
                       displays the ASSESSMENT structure. If SUPERUSER
                       is the current user, the system loads the last
                       active assessment first.
int closeORA(), lastsess(), loggedon(), roode, statusflag;
char *clock();
Difdef CHRCKOUT
printf("\npeprobet ");
Sondif
loggedon();
if (!stromp(ASSESSACEST.name, "SUPERUSER") ) ( /* Not COMMENTED ?
   statusflag = lastsess();
                                              /* Got last session
   if (statusflag - 0) (
                                               /* Found it!
```

```
RIEC SOL SELECT USERNAME
                                            /* Find the nume of the */
              FROM systemilist
                                            /* last assessment
                                            /# worked on
              WHERE meerid = :meerno:
      #1fdef CERCIDOT
        printf(" %ld", sqlos.sqloode);
      Bondif
      if (sqlos.sqloods = SQL_ROF) ( /* Trouble in River City.... */
        SLOTTER ("PERFORST detected logbook violation. ID = %d", Userno);
Sprintf(dante, "\n%s PERFORST detected logbook violation. ID = %d",
                alock(), mearno);
         closeCRA():
        exit (255) ; }
      roods = ASAMooan (a2bv.arr); /* Sign on as that last assessment */
        SLOVIES ("ASAMooun error not trapped");
         THE TYPE SAID
         SLOUTS (sqles. sqlerm. sqlerme);
     return roods; /* ASANoona will have put up the proper screen */
     if (statusflag - SQL_BOF) (
        SLOUTER ("No work ever done yet: You can only start a new one");
        blakdspl();
        HHM SCREEN ("abgairessares");
      expense ();
     return statusflag:
) sale
           /* When you are already connected to ASAH as a regular user */
           /* You YOUREELF are now the last user and the time is NOW! */
   stropy(planrist.arr, planracm.arr);
   EXEC SQL SELECT TO CHAR (SYNDATE, 'dd-Mon-TY EE24:MI:88')
                 FROM dual into : lastdate;
   HENVALS ();
   HER SCREEN ("probotatscreen");
   return 0:
   1
1
int blakdepl()
blakdspl
                 -- Routine to blank out the common display area.
                      This is a safety precention, since if the list
                      to be displayed is capty, whetever was left from
                      the previous list would show. This is because
                     the "bunch" routines don't "remember" how often
                      they have been called and so don't blank out a
                     display when they run out of detai
register int m, 1;
m = (sixeof deplmult) / 34;
for (1 = 0; 1 < m; 1++) {
    dsplmult[1].arr[0] = '\0';
  deplault[1].lea
                    = 0;}
MERVALS ();
screensm.pc -- Routines to set up the screens for MRs.
     This file contains:
               - Puts up screen to work with MTRs
     pechgatr
               - Puts up screen to select a new MIR
     penuntra
               - Puts up screen to define a new mtr
     penisreq
               - Puts up screen to define mission require
     montreat
               - Make a textblock of an MTR's Navigation Point user data *
- Starts the MTR entry process *
     octatrpt.
```

```
natutipt
                 - Store as MTR Marigation Point and advance entry one step
      incutrpt
                - Insert an MTR Mavigation Point into the database
                - Varify existence of miraraft data for MTR calculation
      VÍVE CESTE
      of yant r
                 - Varify existence of a MTR on the system
                - Cancel the MTR currently pending on the detabase
                 - Commit the MTR currently pending on the database
      CRACIE aggoes routines:
       1. ...listo() Open Cursor (Opens a "logical file")
2. ...listf() Fetch Cursor (Reads next record from logical file)
           ...bunch() Fetch Cursor (Reads next bunch from logical file
                       applicable only for multiple choice options)
     4. ...lists() Close Cursor (Closes the logical file)
     ... = ms* - Homes of all accessible MTRs (Alphabetical order)
      ... - mt* - Segments of a particular MTR
      ... m max - All user information for a particular MTR
               * - Asterisk indicates that multiple choice option is
                   supported for this set of routines.
*****
Singlade <otdio.b>
@define SQLCA_STORMS_CLASS extern /* Switch for header files
BEEC BOL DECLEDE SOLCA;
MIRC SOL BEGIN DECLARE SECTION:
                                     /* All SQL declarations are in
                                     /* these header files
EGG SOL DECLUME hostware.h:
EXEC SQL ISCLUDE Charris.h;
EXEC SQL END DECLARE SECTION:
                                     /* Standard ASAN Seeder File
Sinclude 'asan.h'
 estreat()
pentrest -- Set up routine for "MTR Data Entry Screen"
     Routine finds last MTR known to have been worked on that is "good"
      (i.e. not one that has been abandoned during entry) makes that the
      current noise source and mirid and puts up the screen.
char *glock():
void exponeg();
difdef CRECKOUT
printf("\npomtrest ");
Sendi f
EXEC SQL SELECT label, type, status, descr, orig,
                                                 /* The laundry list */
               sched, owner, TO CHAR (date pub, 'dd-Mon-yy'),
               TO CHAR(timestemp, 'dd-Mon-yy EE24:MI:88')
sources /* the list of accessible sources */
        FROM
               :sraid, :sratype, :sradesc, :sraorig,
        13770
               :sresched, :sroowner, :sropdate, :sroodate
                                             /* for this name and */
/* which is an MTR */
        WHERE label = : lastmtr
               AMD type = '1';
difdef CHECKOUT
  printf(" %ld owner %d", sqloa.sqloode, sroowner);
Bondif
if (sqlog.sqloods) (
  if (sqlos.sqloods - sqL BOF) (
     sprintf(srodesc.arr, "There are no MIRS active for ts", ASSESMENT.nome);
     srodesc.len = strlen(srodesc.arr);}
  also {
     EMPONES:
     Sprintf (dente,
     "\nts ts\n\t\t\t looking for MTR ts in Source Library for td",
     clock(), sqlca.sqlerm.sqlermc, n2bv.err, Assessmer.id);
     emponeg();
```

```
return (int) eqloa.eqloode;}
also (
  erodesc.arr[srodesc.les] = '\0';
  sroodate.arr[sroodate.len] = '\0';
sropdate.arr[sropdate.len] = '\0';
   sresched.arr[sresched.lea] = '\0';
  sroorig.err[sroorig.lea] = '\0';
  sreid.arr[sreid.lea] = '\0';}
MENVALS (1:
NEW SCREEN ("mtratry");
return (int) sqlog.sqloods;
pechgatr()
pechantr -- Set up routine for surees to change to new METR
     Routine (1) opens cursor for fatch of all MTR names known to system
            (2) fetches the first betch into memory
            (3) puts up "chgounstreorees"
int blakdspl(), mslisto(), msbunch(), roods;
ifdef CENCEDUT
printf("\mpschgmtr ");
Boads #
blakdepl():
NEW SCREEN ("chgourstreamen");
SLOUT("Retrieving ASAH's list of eccessible MERs");
roode = melisto();
return (reeds ? reeds : msbunch());
int penuntra (nemo)
penumtra -- Set up routine for new MTR entry screen
    Noutine (1) verifies that the new name is unique. If not, the
               reason (whether it is already on your list or eacther
assessment already has exclusive use of it) is shown
            (2) puts up the MFR definition screen and starts it
char some[];
char *clock();
int roods, melists(), mebunch();
wold exponeg();
printf("\npenwatra ");
Boads f
REMOVE_WINDOW();
SLOUT ("Fromesing New MIR Request");
if ({ roods = vfyYmtr(name)) != SQL_ROF) { /* Check for strange things */
  if ( roods == 0) {
     sprintf(workspace.arr, "Sorry, but %s already exists", name);
     MLOUTEP (workspace.arr);
     return (-1);}
  if ( roods - DUFLICATE OBJECT) (
```

```
Them systeerlist
               2270
                     :tid
               WHERE userid = : sroomer;
      tid.arr[tid.lem] = '\0';
      sprintf (workspace.arr,
         "Sorry! 4s already \"omms\" 4s", tid.arr, name);
      SLOUTER (workspace.arr);
      roturn (-1);}
   amponeg();
   fprintf(dante, "\nts P@notestr: ts", clock(), sqlca.sqlcrm.sqlcrmc);
   erestat = 'U';
   melista():
                                               /* Close list of choices
   stropy (srcid.arr, n2bv.arr);
                                               /* This is now the mtr name */
   STGID.len = 22bv.len;
EXEC SQL SELECT TO CHAR(STEDATE, 'dd-Mon-yyyy')
/* Suggest a date of Fabl. */
   sraid.len w n2hv.len:
   srapdate.arr[srapdate.les] = '\0';
   diffet CERCEDUT
      printf("\mDATE (sqloods = tld) tu ts", sqlos.sqloods,
                     sropdate.les, sropdate.err);
   fendif
   srodesc.len = 0:
   srodesc.arr[0] = '\0';
   srostat = 'A':
   MEN SCREEN ("mtrdofinescreen");
                                               /* Fut up data entry screen */
   HENVALS ():
   return (int) 0; }
int penisreq()
      penisreq -- Routine to set up the Mission Requirements S
int MEN SCREEN();
Bifdef CHRCKOTT
printf("\npomisreq ");
Beadie
HEN_SCREEN ("missroq");
return 0;
5
int mintrixt()
mintrist -- Create a textblock of an MTR's Navigation Points
                    user information (Identifier, Fix info, etc.)
char *clock();
FILE *fopen();
int i, j, mtlisto(), mtlistf(), mtlista(), falose();
Bifdef CENCROUT
printf("\maketrtxt ");
gendif.
if ((txtblkf = fopen("txtblk\\mtr.txt", "w") ) == NULL) {
  SLOUTER ("Error opening file for help window");
fprintf(dante, "lats could not open hrm tartblock file for td",
alock(), ASSESSMENT.id);
  return (int) DUPLICATE OBJECT; }
fprintf(txtblkf, " Mavigation Points for %s are:\n\n", sreid.arr);
stlisto();
if (!sqlca.sqlcode) {
  for (;;) {
     mtlistf();
     if (sqlca.sqloode) break:
     for (i=eraid.len, j = 0; i < n2bv.len; i++, j++)
```

```
pressypt.err[j] = a2bv.arr[i];
              : '\0' = [t] rra. tqvac
          fprintf(txtblkf, "4-4s4-5s 403d/403d 4-12s 402d/402d\m",
                   pressypt.arr, prefixed.arr, prefixed, prefixed,
                  prefixtyp.arr, provideft, providright);
      if (sqlcs.sqlcode to sql_mor) {
         fprintf (deste,
     "late &s/a/t/t/t looking for MTR segments in MTREMONITS for td", clock(), sqlca.sqlcrim.sqlcrimc, n2bv.arr, Assessment.id);}
Sprintf(txtblkf,"\n = MED ==\n\n\n\n\n\n\0");
                                  - mm -|a|a|a|a|o");
     mtliste();
  falose (txtblkf);
  return (int) sqlos.sqloode;
  int entmtrpt()
                     -- Inserts the originating and scheduling activity in
                          the SOURCELIST and pope up the window for entering
                          METR movigation points.
  Sifdef CHECKOUT
 printf("\nestmtrpt ");
 EMBC SQL SELECT TO_CEAR(SYEDATE, 'dd-Mos-YY RE24:MI:SS')
                       FROM dual INTO :sroedate;
                                                                  /# Bow #/
 Difdef CERCEOUT
 printf(" DATE = 4ld ", sqloa.sqloode);
 Bendie
 srodesc.len = strlen(srodesc.arr); /* While the interface knows, */
sroorig.len = strlen(sroorig.arr); /* ORACLE doesn't that know yet; */
 srosched.len = strlen(srosched.arr);
 if (stroup (Assessment.nome, "SUPERCORR")) {
    STOOMER - ASSESSMENT.14;
    EXEC SQL DESERT ISTO BYSOURCES (LABEL, TYPE, STATUS,
                            DESCR, ORIG, SCHED, OWNER, DATE FUB, TIMESTAND)
               VALUES (:sroid,
                                         /* Home given to this MTR
                           '1',
                                           /* Code identifying MTRs
                         :srostat.
                                           /* Obsolescence/Applicability
                                           /* English Description
                        : stodesc,
                                         /* Originating Activity
/* Scheduling Activity
                         :sroorig,
                         :srosched,
                        :groomer,
                                           /* This assessment's id
                        TO DATE (:sropdate, 'dd-Mon-yyyy'), /* Dete of publ.
TO DATE (:srondate, 'dd-Mon-yy HE24:MI:88'));}
           or = 0;
    ENEC SQL DESERT DETO ROISE SOUTHER (LARKE, TYPE, STATES, DESC, ORIG, SCHED, OWNER, DATE FUR, THEISTING)
              VALUES (:sroid,
                                          /* Home given to this MTR
                           '1',
                                          /* Code identifying MTRs
                                          /* Obsolenscence/Applicability
                        :srostat,
                        : grodesa,
                                          /* English Description
                                          /* Originating Activity
                        :sroorig,
                                          /* Scheduling Activity
                        : sresched,
                                                                                      */
                       WOLL.
                                          /* SUPERUSER doesn't mess around!
                       TO DATE(:sropdate,'dd-Mon-yyyy'), /* Date of publ.
TO DATE(:srondate,'dd-Mon-yy EE24:MT:88'));)
Gifdef CHECKOUT
printf(" Insert = %ld", sqloa.sqloode);
if (sqlos.sqloods) {
   sprintf(workspace.arr, "FATIED 4s", sqica.sqiarma.sqiarma);
SLOOTBS((workspace.arr[7]); /* Track arrors other than data conversions */
if ((sqica.sqicode < -1899) || (sqica.sqicode > -1800))
      fprintf (dente,
```

```
"\a&s &s\a\t\t\t entering MTR &s into Source Library for &d",
       slock(), workspace.arr, sroid.arr, sroomer);
    erestat = '0';
                        /* Leave a special code to prevent committing MTR( #/)
 also {
    srostet = '1';
                       /* (Still) looks like a good MTR to me! */
    MEN SCREEN ("definodmirscreen");
    premaypt.arr[0] = curnaypt.arr[1] = '\0'; /* Initialize variables */
    pressypt . les
                      = ournavpt.lea
    prefixid.arr[0] = curfixid.arr[0] = '\0';
                      = cerfixid.les
    profixed les
                                          - 0;
    profitred
                                         - 0;
                      - curfixred
                     - curfindict
    profindist
    prefixtyp.arr[0] = curfixtyp.arr[0] = '\0';
    carmeaht.sur[o] = 'F,'
carmeaht.sur[o] = 'F,'
    stropy(show.loa, "...x...'..\"W");
                     = est.les[0]
                                          w '\0';
    cat . Lat [0]
    stropy (prohighalt.spec, ".... MEL");
    STRCFY (prelowelt.spec, ".... AGL");
    previdleft
                     - ourwidleft
                                          - 0;
    providright
                     - curvidright
    preartoc.arr[0] = carartoc.arr[0] = '\0';
   MENUALE ():
    lptr1 = &curlowelt.altitude; /* Set pointers for ORACLE ISSUER'S later */
    lptr2 = &curhighalt.altitude;
    optri = ourlowelt.units;
    optr2 = ourhighalt.maits;
    optr3 = est.lat;
    optr4 = eat.los;
    dotri = Sent.eastings;
    dptr2 = Seat . northings;
    dptr3 = &cat.letitude;
    dptr4 = 6emt.longitude;
return (int) sqloa.sqloode;
ist astatept()
artistrpt -- Store as MTR Mavigation Point and advance the
                   current MAV POINT to be the previous.
**************************************
register int 1:
int inemtrpt();
Sifder CHECKOTT
printf("\maxtmtrpt ");
gendif.
if ((insmtrpt()) {
    /* Mivence the New Point Paremeters */
  for (i = 0; i < 3; i++) premavpt.arr[i]
                                              = curnavpt.arr(1);
  for (1 = 0; 1 < 3; 1++) preartoc.arr[1]
for (1 = 0; 1 < 5; 1++) prefixed.arr[1]
                                              = curartoc.arr[i];
                                               = ourfixed.arr[1];
  for (i = 0; i < 10; i++) prelowalt.spec[i] = curlowalt.spec[i];
  for (i = 0; i < 10; i++) prehighalt.spec[i] = curhighalt.spec[i];
  for (i = 0; i < 12; i++) prefixtyp.arr[i] = curfixtyp.arr[i];
for (i = 0; i < 14; i++) show.lat[i] = cart.lat[i];
  for (1 = 0; 1 < 14; 1++) show.lat[i]
for (1 = 0; 1 < 14; 1++) show.log[i]
                                              = cat.loa[1];
  prefixred
              · curfixred;
  prefindist = curfindist;
previdleft = curvidleft;
  prewidright = curwidright;
   /* Blank out the Haw Point Parameters */
  curnavpt.arr[0]
                     - '\0';
                     - '\0';
  est . lat for
                     = '\0';
  est.los[0]
```

```
est.lstitudo
                       - OFF HARTE;
    ent.longitude
                        - CTT EARTE;
                       - 0;
    mediared
    mediation
                            0 ;
   HEEVALG():
return (int) sqlon.sqloode;
int inemtrot()
       incertrpt -- Insert as MFR Mavigation Foint into the detabase
int cancetr();
register int 1:
void amponeg();
#1fdef CHBCEOUT
printf("\minemtrpt ");
 Bondse
if (COORZutn(Sent)) return (int) -1;
stropy (n2bv.arr, sraid.arr);
stroat (a2bv.arr, gurnavpt.arr);
m2bv.len = strlen(n2bv.arr);
EXEC SOL THERESE TIPTO METREBOR
                         (FIX LABEL,
                                        FLOOR REF, CRILING REF, FIX ID,
                          FIX_TIPE,
                                         ARTOC, FIX LAT,
FIX DIST, FLOOR,
                                                                   FIX LOW,
                          FIX RAD,
                          HIDTH LEFT,
                                         HIDTE RIGHT)
                   VALUES (: n2bv,
                                        :optr1,
                                                     :aptr2,
                                                                   : corfixed,
                                       :operi, :operi,
:ourartoc, :optr3,
:ourfixdist, :lptr1,
                          : curfixtyp,
                                                                   : aptr4,
                           : ourfixed.
                                                                   :lptr2,
                          :ourwidleft, :ourwidright);
#1fdef CENCEDUT
  printf(" Insert1 = %ld", sqlos.sqloods);
   adif
if (sqlos.sqloods = EXISTS) SLOVING ("Duplicate Navpoint Id");
   olse emponeg();
   cancert();) /* This is necessary since ORACLE automatically rolls back */
/* the inserts already done at this point ! */
also {
   EXEC SQL INSERT INTO MAVPOINTS ( FIX LARRY, X, Y, LAT, LON )
                         VALUES( :n2bv, :dptr1, :dptr2, :dptr3, :dptr4);
     printf(" Insort2 = *ld", sqlon.sqloods);
   Bondie
   if (sqloa.sqloods) {
      exponsy ();
      if (sqlca.sqlwarn[0]) exposen();
      concentr();) /* ORACLE automatically rolls back */
                    /* inserts after this occurs !
return (int) sqloa.sqloode;
int vivacetr (neme)
vfyacatr -- Verify the existence of aircraft data for
                           MIR calculations in the database
      Routine looks in MTRSELTAR (a view on a HEADQUARTERS table), loads
     pr per u with the power units for which we have data for the aircraft and returns sqlcs.sqlcode for the query. Sero means MTR exists, SQL ROT means it does not, all other values indicate an SQL error.
```

```
char seme(1:
 register int 1;
  char *clock();
 Bifdet CONCROST
 printf("\avfycostr ");
 Bendif
 n2bv.len = strlen(neme);
 for ( i=0; i < n2bv.len; i++)
    n2bv.arr[i] = name[i] = toupper(name[i]);
 pr pur s.arr[0] = '\0';
 pr pur u.lea = 0;
 more aga samer power waits
                                     /* See if siroraft power units */
                                     /* are in the list of siroraft */
         FROM streeltab
         INTO :pr_pwr_u
WERRE aircraft = :a2bv;
                                     /* for which we have MTR data */
 difdef CHECKOUT
   printf(" %ld %s power in %s", sqlca.sqlcode, n2bv.arr, pr_pur_u.arr);
 if (sqlca.sqlcode) {
  if (sqlca.sqlcode == SQL_BOF) {
      sprintf(workspace.arr, "MCR Calculation not supported for %s", n2bv.arr);
       SLOUTER (workspace.arr);}
    also {
       fprintf (daste,
       "\ats ts\a\t\t\t looking for ts in MTREELTAB for td",
      clock(), sqlos.sqlerms.sqlerms, a2bv.arr, Assessment.id);}
 alse {
   pr_per_u.arr[pr_per_u.lea] = '\0';
for ( i=0; i < n2bv.lea; i++)
      sc name.arr[i] = n2bv.arr[i];
   ac seme.les - i;
   ac ame.arr[i] = '\0';
                                  /* Load the reference conditions */
   EXEC SQL SELECT power, speed
FROM Extractab
                                    /* as initialization for this
         MERE aircraft = :ac nume;
                                             /* Aircraft/Mission
   ac pre pur = ac cur pur;
   ad pre spd - ac our spd;
 Hifdef CHECKOUT
   printf(" tld to power in to", sqlos.sqloods, n2bv.arr, pr_per_u.arr);
Beadif
   MENVALS(); }
return (int) sqlos.sqloods;
wfymetr -- Verify the existence of a MTR on the system
     Routine looks in SOURCELIST (a view on a SUPERUSER table), loads
     sroomer and returns sqloa sqloods for the query. Sero means MTR exists, SQL_BOT means it does not, all other values indicate an SQL
      error except that DOFLICATE CRUECT means that the object exists on
      the system but is not accessible to the present assessment
********************************
char some[];
register int 1:
#1fdef CHRCHOOT
printf("\nvfyMatr ");
endi.f
```

```
n2bv.len = strlen(neme);
for ( i=0; i < m2bv.len; i++)
    n2bv.arr[i] = toupper(neme[i]);
HERE SQL SELECT OWNER
                                  /* Identify the owner from */
        FROM sourcelist
                                  /* the list of all sources */
        THERE label w :m2bv
                                  /* which has this name and */
              MED type = '1';
                                  /# 10 mm MER
diffet CERCEDO?
  printf(" tld owner td", sqlon.sqloods, sroomer);
1f (sqlos.sqloods - EULL_FETCHED) return (int) 0;
1f ((sqlos.sqloods == 0) if (srowmer != Assusment.id))
return (int) DUPLICATE OBJECT;
return (int) sqloa.sqloods;
int commutr()
connectr -- Cancel the MFR currently pending on the database
     Boutine always issues a ROLLBACK
int postreat();
diffet CHECKOT
printf("\monacetr ");
Boadle
EXEC SQL BOLLBACK HORE;
difdet CERCEDOT
  printf("*ld", sqloa.sqloode);
sprintf (workspace.arr, "Entry for MER to CAMCHILLED", sreid.arr);
SLOUTS (workspace.arr);
sreid.arr[sreid.lea = 0] = '\0';
postreet();
return (int) sqlos.sqloods;
/annennennannennannennannennannennannennannennannennannennannenna
       saventr -- Commit the MTR ourrestly pending on the detabase
     Routine checks if there is a valid MTR being constructed then
     issues a COMMET to the detabase
**********************************
difdef CERCEDOT
printf("\nsavontr ");
Bendif
mtlista();
1f (srostat - '0') (
  SLOUIS ("MIR had errors and was not saved");
  EXEC BOL ROLLBACK WORK:
  #1fdef CERCEDUT
  prints("ROLLED METR RACK!.... %ld", sqloa.sqloods);
  srcid.arr[srcid.lea = 0] = '\0';
alse { /* First check if we have to enter one more point! */
  if (ournawpt.arr[0] |= '\0')
```

```
if (insutrpt()) return (int) sqlos.sqloods;
    MINIC DOL CORRECT WORK;
    difdef CERCEDOR
      printf("Committed MTR %ld", sqloa.sqloode);
    Beads #
  matroat():
 return (int) sqlqn.sqlqods;
int melisto()
 melisto --- Open cursor SI for a list of MTRs on the system
                       that are accessible to an assessment
      Noutine executes an open cursor command for cursor $1 and then
      returns to the calling progress with the CRACIAN status code.
      Note: Modifications to this function may impact the related functions melists(), mebusch() and melists() that fetch
              rows and close the cursor and, possibly, functions that
              call these utility routines.
printf("\melisto ");
 Bonds#
HOUSE SQL DESCLARE SI CORSOR FOR
         SELECT label
                                    /* These are unique identifiers
         FROM sources
NEERE type = '1'
                                     /* View of all accessible "sources" */
                                    /* MING are type - 1
         CHORR BY label:
EXEC SCL OFFER S1:
difdef CERCEDOT
printf(" Open: *ld ", sqloa.sqloods);
Bendie
return (int) sqloa.sqloode;
/**********************************
      melistf --- Fetch a row using the opened cursor $1 for MTMs
     Routine amountes an fetch command for cursor S1, which is assumed
to have been opened, and then returns to the calling progrem with
the CRACLE status code.
     Hote: Modifications to this function may impact the related
functions melisto(), mebunch() and melisto() that open,
fotch groupwise and close the cursor and, likely,
              functions that call these utility progrems
BEEC SQL FETCH S1 1970 :sreid;
eroid.arr[sroid.lea] = '\0';
difdef CHRCHOUT
printf(" Fetch: %ld ", sqlca.sqlcode);
Sendif
retura (int) sqloa.sqloode;
int mebunch ()
/*********************************
                  - Fetch a bunch (20 or whatever the size of deplanit)
                     using the opened cursor $1 for mirlist
```

```
Bostine executes an fatch command for cursor Si, which is assu
      to have been opened, and them returns to the calling progress with the CRACIES status code.
     Hote: Modifications to this function may impact the related
functions melisto(), melistf() and melistc() that open,
              fotch and close the cursor and, likely, functions that
             call these willity programs
 **************
register int 1;
 int arous, arous, reede;
 char *clock();
EXEC SQL FETCE SI INTO :deplement;
arous = (int) sqlca.sqlcrrd[2];
mrows = (sixeof deplosit) / 34;
roods = (int) sqlos.sqloods;
printf(" meBunch: *ld returns *d of *d rows", sqlom.sqloods, arows, arows);
 Seedif
if ((roods = SQL_ESTE OF OF OSDER) || (roods == SQL_EST)) {
  if ((roods == SQL_EST) && (aross > 0)) {
      for (1 = 0; 1 < arose; 1++) deplant[1].arr[deplant[1].lea] = '\0';
      if (arows < mrows)
        for (1 = arose; 1 < arose; 1++) deplault[1].arr[0] = '\0';
      HINVALE ();
      SLOOTS ("The last MER in the list is on the screen");
   alse (
      HEWVALE ():
      SLOUTP ("You are already as far down in the list as you can go"); }
alse (
   if (roods) {
      BEDCOMPG;
      fprintf(danta, "\nts MERUSCE: ts", clock(), sqlca.sqlcrms.sqlcrmc);}
   HENVALS ();}
return recein:
int melieta()
           melista --- Close cursor &1 for mirlist
     Routine executes a close cursor command for cursor $1 and them
     returns to the calling progrem with the ORACLE status code.
            Modifications to this function may impact the related
              functions melisto(), mebunch, and melistf() that open the
              cursor and fetch rows using it and, possibly, functions
             that call those utilities
*************************
Diffet CHECKOTT
printf("\melista ");
Bendif
ENTRE SQL CLOSE S1;
difdet CHECKOUT
printf("Close: %ld ", sqlum.sqloode);
Sendif
return (int) sqlos.sqloods;
int mtlisto()
/********************************
      milisto --- Open cursor $2 for a list of near information
                      of navigation points on a particular MER
     Routine executes an open cursor command for cursor $2 and then
```

```
returns to the calling program with the CRACIE status code.
      Note: Modifications to this function may impact the related
              functions stlistf() and stlistc() that fetch rows and
              close the cursor and, possibly, functions that call
              those utility routines.
 ************************************
 Bifdef CHECKOT
 printf("\mmtlisto "):
 -
 stropy( aid.arr, sraid.arr);
 stroat (old.arr, "4");
 aid.les = strles (aid.arr);
EXEC SQL DOCLARE S2 CURSOR FOR
         SHIRCY fix label, fix id,
                                      fix type,
                                                   fix red,
                 fix dist, width left, width right
                mtroogments
fix label LIEE : aid
         ORDER BY fix label;
EDEC SQL COME 81;
printf(" Open: %ld ", sqlom.sqloods);
 Beadte
return (int) sqlos.sqloods;
int mtlistf()
milistf --- Fetch a row using the opened cursor $2 for MER
                     Mavigation Point User Information
     Routine executes an fetch command for cursor 82, which is assumed to have been opened, and then returns to the calling program with
     the ORACLE status code.
     Note: Modifications to this function may impact the related
functions utlisto() and utlisto() that open and close the
cursor and, likely, functions that call these utilities
************************
EXEC SQL FETCE S2 DSTO : n2bv, :profixed, :profixtyp, :profixed,
                      :prefindist, :prewidleft, :prewidright;
prefixed.arr[prefixed.lea] = '\0';
prefixtyp.arr[prefixtyp.lea] = '\0';
Sifdef CHECKOUT
printf(" Fotch: %ld ", sqlca.sqlcode);
Besdif
return (int) sqloa.sqloods;
mtlists --- Close cursor S2 for Mavigation Points
     Routine executes a close cursor command for cursor $2 and then
     returns to the calling progress with the ORACLE status code.
     Note: Modifications to this function may impact the related
            functions mtlisto() and mtlistf() that open the oursor
            and fetch rows using it and, possibly, functions that
            call these utilities
```

```
Fifder CHECKOUT
printf("\matlista ");
 Bonds #
TOTAL SOL CLOSE 82:
Sifdef CHRCHOUT
printf("Close: %ld ", sqlos.sqloods);
Bendif
return (int) sqlos.sqloods;
int malisto()
                 --- Open oursor #3 for a list of user information
                          of navigation points on a particular MTR
       Noutine executes an open cursor command for cursor 83 and them
       returns to the calling progress with the CRACKE status code.
      Note: Modifications to this function may impact the related
                functions mtlistf() and mtlists() that fetch rows and
                close the cursor and, possibly, functions that call
                these utility routines.
Difdef CHRCHOUT
printf("\malisto ");
Bonds #
stropy( cid.arr, srcid.arr);
streat (cid.arr, "+");
cid.len = strlen(cid.arr);
EXEC SQL DECLARE SI CURSOR FOR
         SHLECT fix label, floor ref, cailing ref, fix id, fix type, artos, fix lat, fix los, fix rad, fix dist, floor, cailing, width left, width right
                   mtrogments
                 fix label LIE : cid
          ORDER BY fix label;
BEEC SOL COME 83
difdef CHECKOUT
printf(" Open: %ld ", sqlom.sqloods);
Beads f
return (int) sqlca.sqlcode;
int melistf()
malistf --- Fetch a row using the opened cursor 83 for MTR
                        Mavigation Point User Information
     Routine executes an fetch command for cursor $3, which is assumed
to have been opened, and then returns to the calling program with
the ORACLE status code.
      Note: Modifications to this function may impact the related
functions mtlisto() and mtlisto() that open and close the
cursor and, likely, functions that call these utilities
********************************
                             "); /* If you don't use VARCHAR, you have to */
"); /* clear the space or waird things happen */
stropy(optr3, "
stropy (optr4, "
EXEC SQL PETCE S3 THTO :m2bv,
                                        :aptrl,
                                                      :optr2,
                                                                     : ourfired,
                         :ourfixtyp, :oursetod, :optr3,
:ourfixed, :ourfixdist, :lptr1,
:ourwidlaft, :ourwidright;
                                                                     : optr4,
                                                                     :lptr2.
```

```
prefixed.arr[prefixed.les] = '\0';
profixtyp.arr[profixtyp.lea] = '\0';
Bifdef CHECKOUT
printf(" Fotch: *ld ", sqloa.sqloods);
retura (int) sqloo.sqloode;
int melista()
malista --- Close cursor $3 for Mavigation Points
     Boutine executes a close cursor command for cursor $3 and then
     returns to the calling progrem with the CRACLE status code.
     Note: Modifications to this function may impact the related
            functions wilisto() and wilistf() that open the cursor
and fotch rows using it and, possibly, functions that
            call those stilities
difdef CERCEDOT
printf("\mmtlista ");
Bond1f
ETEC SQL CLOSE 83;
printf(" Close: %ld ", sqlcs.sqlcode);
Bondif
return (int) sqloa.sqloods;
startup.pd -- ASAN'Initialization Code. This program is only
                  used to determine the status of CRACLE and to
                  load those pieces which are needed. The space
                  it occupies can be relinquished after execution.
/* The usual stuff, of course */
/* Header for calls to MS-DOS */
#include oces.b>
#include <string.h>
                            /* String manipulation header */
Sinclude <time.b>
Sdofine SOLCA STORAGE CLASS extern
RIEC SQL BEGIN DECLARS SECTION;
EXEC SQL INCLUDE hostwars.h:
EXEC SOL INCLUDE faharris.h:
EXEC SQL END DECLARE SECTION;
EXEC SQL INCLUDE SQLCA:
dinglude 'asan.h'
strtASAN()
strtASAN -- start ASAN function
        Starts by attempting to connect to CRACLE as "SUPERUSER".
        If ORACLE is not up it will attempt to install it. If
        unsuccessful, execution will terminate with appropriate
        diagnostic information (i.e. what piece of the CRACLE
        detabase menager it cannot find).
    Note: This program is totally dependent on how ORACLE and its
          associated programs behave. It should be tested (with
          @define CEECHOUT here and in other files with ORACLE cells)
          when a new ORACLE release is installed. Particularly the
         return codes for uninstalled systems, since they are not
```

```
ording to specification in release 5.1. (e.g., -3120
            should be -3121) .
/* Oracle return code temporaries */
                                 /# MS-DOS rotura code #/
int spensip(), SUccen();
char *clock():
stropy (Assessment. name, "surement");
00 roods = SUcons () :
                                 /* Try SUPERUSER and see that happens */
if (roods = 00 roods) {
                                /* 0 - COLACILE up and running */
   switch (roods) (
                   /* 3120 - SQLPSS is not installed */
   0250 -3120:
      doods " spewalp (F_MAIT, "sqlpme.ome", "sqlpme.ome", "/neier", MULL);
     12 ( doode < 0 ) {
        printf("\nsystem not properly installed! AGAN cen't find");
        printf("\moracle's Frotested Mode Executive SQLEME.EXE");
        printf("\nYour Data Administrator should be able to help\n\n\n");
        fprintf(dante, "\nts square Failed (td)", alook(), doode);
        exit (16);}
     else if ( doode < 760 ) {
        printf("\noracte's Protected Mode Executive SQLPME.EXE");
        printf("\nAbsormally terminated. Return code was %d", doode);
        printf("\aYour Data Administrator should be able to help");
        fprintf(dante, "\nte squass Failed (td)", aloak(), doods);
        exit (16);}
     fprintf(dente, "\ate SQLEME Installed", clock());
  case CRA CHAVAILABLE: /* Not available: Do IOR first */
     doods = spennip (? WAIT, "ior.exe", "ior.exe", "warm", HULL);
     1f ( doods < 0 ) {
        printf("\nSystem not properly installed: AGAN con't find");
        prints("\moracle's Startup routine TOR.EEB");
        printf("\nYour Data Administrator should be able to help");
        fprintf(dente, "\nts ORACLE Server Failed(%d)", clock(), dcode);
        oxit (16) ; }
     alse if ( doode > 0 ) {
       printf("\noracte's Initialization Routine TOR.EXE has");
        printf("\nAbmormally terminated. Return code was td", doode);
       printf("\aYour Data Administrator should be able to help");
        fprintf(dente, "\nts GRACTE Server Failed (4d)", slock(), doode);
        exit (16);}
                         Give COMMET one more try
       fprintf(dante, "\nts ORACLE Server Started", alock());
       if ( mode = 800can() ) {
   printf("\nASAW has attempted to install the ORACLE Database");
          printf("server, but after what \nappears to have been a ");
printf("\successful installation ASAN doesn't want to start");
          printf("\nCause: &s", sqlcm.sqlerme);
          if (sqlca.sqlcode - SQL NAD LOGOS)
      printf("\s\tASAN installation program has probably not been rem yet");
          printf("\nYour Data Administrator should be able to help\n\n");
          closeCRA();
          fprintf(dants, "\nts Initial Connect failed second time (td)",
                  aloak(), zoode);
          exit (16);}
 default:
    fprintf(dante, "\nes ASAH cannot establish communication with CRACLE",
            aloak());
    fprintf(dente, "\nCause: %s", sqlca.sqlerms.sqlerms);
    printf("\n\nASAN cannot establish communication with the ORACLE ");
    printf("Detabase Server. \nCause: %s", sqlcs.sqlerms.sqlerms);
    if (sqlos.sqloods - sqt_BAD Logom)
   printf("\n\tAssm installation program has probably not been run yet");
   printf("\aYour Data Administrator should be able to help\x\a");
    eystem ("pause");
```

```
aloseORA();
     exit (16);}
   } /* Bad Switch */
     /* Bad If */
 fprintf(dante, "\nts ASAW Started ", slock());
return 0:
int vey Assas ()
vfy_ASAN -- Routine to check ASAN release levels and other system
                 integrity functions. This function is not implement
in nor meaningful for the prototype version of ASAN
return (int) 0;
int puchock()
proheck -- Routine to check password and/or user name validity
                 This function is not implemented in the prototype
return (int) 0;
tables.ps -- Set of routines to access the data distingary's
                   inventory of users, tables, columns etc.
    For each CRACLE cursor there are three routines as follows:
      1...listo() Open Cursor (Opens a "logical file")
2...listf() Fetch Cursor (Reads next record from logical file)
         ...bunch()
                   Fetch Cursor (Reeds next bunch from logical file
                    applicable only for multiple choice options)
       4. ...listc() Close Cursor (Closes the logical file)
    Routines in this file:
     ... = u* - Homes of assessments (LIFO order on date started).
           t - Homes and comments of all tables CREATED by current
                 assessment only.
            c - Manes and come
                             ents of columns in specific table [:tid]
                 (retrieved in order of column in the table) .
           to - Homes and comments of columns in all tables CHEATED by
                 current assessment (sorted alphabetically on table and
                 column within table)
            w - ASAH table of contents in alphabetic order.
             * - Asterisk indicates that multiple choice option is
                 supported for this set of routines.
                            /* The usual stuff, of course */
/* Ecader for calls to MS-DOS */
#include <stdio.b>
/* String manipulation beader */
#define SQLCA_STORAGE_CLASS entern
MORE SOL INCLUDE SOLCA;
                            /* SQL Communication Area */
EXEC SOL BEGIN DECLARE SECTION:
EXEC SQL INCLUDE hostvars.h;
EXEC SQL INCLUDE Sabarris.h;
EXEC SQL EED DECLARE SECTION;
#include "esea.h"
                            /* Standard ASAE Seeder file */
ist ulisto()
```

```
ulisto --- Open cursor VI for userlist (ASAN assessments)
      Boutine amountee as open cursor command for cursor UI and them
      returns to the calling progrem with the ORACLE status code.
      Note: Modifications to this function may impact the related
             functions ulistf(), ubunch() and ulista() that fetch rows
             and close the cursor and, possibly, functions that call
             these stility progress
 Bifdet CHECKOUP
 printf("\aulisto ");
 EXEC SQL DECLARE UI CURSOR FOR
                  SELECT REGISSION
                                      /* Assessments are ORACLE Users */
                                      /* Standard Data Dictionary view */
                  FROM sysusarlist,
                       table of contents /* ASAE's List of assessments.
                  WHERE systemist.userid = table of contents.idnumber
                  CROSER BY timestemp DESC; /* LIFO Listing Order */
 HERE AGE OPER UL;
 #Lidef CENCEDUT
 printf(" Open: %ld ", sqlom.sqloods);
 Sendit f
 return (int) sqlos.sqloods:
int mlistf()
 ulistf --- Fotch a row using the opened cursor Vi for userlist
     Noutine executes as fetch command for cursor VI, which is assum
     to have been opened, and then returns to the calling progress with
     the ORACLE status code.
     Note: Modifications to this function may impact the related
            functions ulisto(), ubunch() and ulisto() that open,
fetch groupwise and close the cursor and, likely, any
            functions that call these utility programs
BING SQL FETCE VI INTO : mid:
uid.arr[uid.lea] = '\0';
Difdet CHECKOUT
printf(" Fetch: *ld ", sqlcc.sqlcode);
Bendi f
return (int) sqlos.sqloods;
int ubunch ()
--- Fetch a bunch (20 or whatever the size of deplault)
                  using the opened cursor VI for sysusorlist
     Routine executes an fetch command for cursor VI, which is assumed
     to have been opened, and them returns to the calling progrem with
     the ORACLE status code.
     Note: Modifications to this function may impact the related
            functions ulisto(), ulistf() and ulista() that open and close the cursor and, likely, functions that call those
            utility programs
**********************
register int i;
int prove, prove, reode;
char *clock();
```

```
MING SQL FERCE UI INFO :depletalt;
  arous = (ist) sqlos.sqlorrd[2];
  mrows = (sizeof depimult) / 34;
  roode = (int) sqloa.sqloode;
  Bifdef CHRCHOUT
 printf(" Bunch: $1d returns $4 of $4 rows", sqloa.sqloods, arows);
  -
Gendif
  if ((roods -- Sgr_Erre OF OF ORDER) || (roods -- Sgr_EoF)) {
  if ((roods -- Sgr_EoF) & (aross > 0)) (
       for (i = 0; i < aross; i++) deplant[i].arr[deplant[i].lea] = '\0';
       if (prove < prove)
          for (i = arose; i < arose; i++) deplault[i].arr[0] = '\0';
       MENVALS ();
       SLOOTS ("The Last assessment in the list is on the surcen"); }
    also {
      HENVALS ();
       SLOUTP ("You are already as far down in the list as you can"); }
 else if (roode) fprintf(dante, "\nts UBURCE: ts",
                        clock(), sqlos.sqlorm.sqlorma);
 DESTALE ()
 return recen:
 /***************************
            mlists --- Close sursor Vi for userlist
       Routine executes a close cursor command for cursor VI and then
      returns to the calling progress with the ORACLE status code.
      Note: Modifications to this function may impact the related
functions ulisto(), ulistf() and ubunch() that open the
cursor and fetch rows using it and, possibly, functions
              that call these utilities
 difdet CERCEDUZ
 printf("\aulista ");
 Bondif
 EXEC SOL CLOSE VI:
 difdef CERCHOUT
 printf("Close: %ld ", sqloe.sqloode);
 Boadit
return (int) sqlca.sqlcode;
int tlisto()
/*****************************
             --- Open cursor U2 for list of tables in an assessm
      Noutine executes an open cursor command for cursor U2 and then
      returns to the calling program with the CRACLE status code.
      Note: Modifications to this function may impact the related
             functions tlistf() and tlistc() that fatch rows and
close the cursor respectively and, possibly, functions
             that call these utilities
***********************
#1fdef CHECKOUT
printf("\ntlisto");
Bondif
EXEC SQL DECLARE U2 CURSOR FOR
                                     /* That is what table name and */
                SELECT name, cont
                FROM sys. viewptab
                                    /* comment are called in this view */
                ORDER BY DOSS;
MINEC SOL OPEN UZ:
```

```
Sifdef CHECKOUT
printf(" Open: %ld ", sqlom.sqloods);
Bendif
return (int) sqles.sqleode;
int tlistf()
        tlistf --- Fotch a row using the opened cursor U2 for tablelist
    Routine executes an fetch command for cursor U2, which is assumed
    to have been opened, and then returns to the calling program with
    the CRACLE status code.
    Note: Modifications to this function may impact the related
           functions thisto() and thisto() that open and alose
           the cursor respectively and, possibly, functions that
           call those willities
EXEC SOL FETCE U2 1270 :tid, :workspace;
tid.arr[tid.lea] = '\0';
workspace.arr[workspace.lea] = '\0';
Sifdef CHBCEOUT
printf(" Fetch: %ld", sqlos.sqloods);
Beadif .
return (int) sqlos.sqloods;
int tlista()
tlists --- Close cursor 02 for tablelist
    Routine executes a close cursor command for cursor U2 and then
    returns to the calling program with the CRACLE status code.
    Note: Modifications to this function may impact the related
           functions tlisto() and tlistf() that open the cursor and
fetch rows using it respectively and, possibly, functions
           that call these utilities
Bifdef CHRCHOUT
printf(" tliste ");
BOOK BOL CLOSE D2
Bifdef CRECKOUT
printf("Close: %ld ", sqlos.sqloods);
return (int) sqloa.sqloode;
int clisto()
clisto --- Open cursor V3 for list of columns in a table
    Routine amountes an open cursor command for cursor U3 and then
    returns to the calling progrem with the ORACLE status code.
    Note: Modifications to this function may impact the related
           functions clistf() and clistc() that fetch rows and
           close the cursor respectively and, possibly, functions
           that coll these utilities
*************************************
1
```

```
#1fdef CHECHOUT
printf("\nclisto");
Bondiff
EXEC SQL DECLARE US CURSOR FOR
                SELECT CRASS
                                      /* That is what the column is */
                                      /a called in this view
                                      /* For the current table
                WHERE tame = :tid
                                      /* In order of erection
                congr. BY colpo:
HIREC SQL OFFER US;
#ifdef CENCEDOT
printf(" Open: %ld ", sqlom.sqloode);
@esdif
retura (int) sqloa.sqloods;
int clistf()
clistf --- Fetch a row using the opened cursor V3 for column list *
     Routine executes an fetch command for cursor US, which is assumed
     to have been opened, and then returns to the calling program with
the ORACLE status code.
     Note: Modifications to this function may impact the related
            functions clisto() and clisto() that open and close
the cursor respectively and, possibly, functions that
             call those utilities
EDEC SQL FERCE US DETO : aid;
tid.arr[tid.lea] = '\0';
printf(" Fetch: %ld", sqloa.sqloode);
eadif
return (int) sqlom.sqloode;
int alista()
/****************************
           clists --- Close cursor U3 for tablelist
     Routine executes a close cursor command for cursor V3 and them
     returns to the calling program with the ORACLE status code.
     Note: Modifications to this function may impact the related functions clisto() and clistf() that open the cursor and
             fotch rows using it respectively and, possibly, functions
            that call these utilities
difdef CERCEOUT
printf(" alista ");
Bondse
EXEC SQL CLOSE US;
difdef CHECKOT
printf("Close: %ld ", sqloa.sqloods);
@endif
return (int) sqlca.sqlcode;
int talisto()
/***************************
   tolisto --- Open oursor U4 for list of all columns sorted on table
```

```
Routine executes an open cursor command for cursor W4 and then
     returns to the calling progrem with the CRACLE status code.
     Note: Modifications to this function may impact the related
             functions tolistf() and tolisto() that fetch rows and
             close the cursor respectively and, possibly, functions
             that call these stilities
fifted CHECKOUT
printf("\stalisto");
MESC SQL DECLARE V4 CURSOR FOR
                  MILECT tome.
                                       /* THUNG is the table name */
                                       /* CHANGE that of the column */
                         CRAMA.
                                       /* in the COL view of the */
                         remarks
                                       /* ORACLE Data Dictionary */
                  PROM col
                  CODER BY tag
EREC DOL COME V4;
Bifdof CHICKETT
printf(" Open: %ld ", sqlom.sqloods);
return (int) sqlos.sqloode;
int tolistf()
    telistf --- Fetch a row using the opened cursor U4
                   (column names sorted by table name)
     Routine executes an fetch command for cursor U4, which is assumed to have been opened, and then returns to the calling program with
     the CRACLE status mode.
     Note: Modifications to this function may impact the related
             functions telisto() and teliste() that open and close
the cursor respectively and, possibly, functions that
             call these utilities
*****************
EXEC SQL FETCE U4 INTO :tid, :cid, :workspece;
tid.arr[tid.lea] = '\0';
cid.arr[cid.lea] = '\0';
workspace.arr[workspace.len] = '\0';
Difdet CHECKOUT
printf(" Fetch: 4ld", sqlca.sqlcode);
gendif.
return (int) sqloa.sqloods;
int talista()
talista --- Close cursor U4 for column list sorted by table
     Boutine executes a close cursor command for cursor U4 and then
     returns to the calling program with the CRACLE status code.
     Note: Modifications to this function may impact the related
            functions telisto() and telistf() that open the cursor and
            fetch rows using it respectively and, possibly, functions
            that call these utilities
```

difdef CENCEDUT

```
printf(" teliste ");
Bendie
EXTEC DOL CLOSE T4;
Sifdef CERCEOUT
printf("Close: %ld ", sqloa.sqloods);
Bondif
return (int) sqlom.sqloods;
int vlisto()
      vlisto --- Open cursor US for list of AGAM's associments
      Boutine executes an open cursor command for cursor US and then
      returns to the calling program with the ORACLE status code.
            Modifications to this function may impact the related
functions vlistf() and vlistc() that fetch rows and close
             the cursor and, possibly, functions that call these
             utility programs
***************
#1fdef CEBCHOOT
printf("\zvlisto ");
Bendif
MORE SOL DECLARE US CURSOR FOR
                   SHIECT userness, description
                     TROM sysuserlist,
                         table of contents
                    WHERE systeerlist.userid = table of contents.idnumber
                 ORDER BY REGITAGO DESC:
EDGC SQL OFTE VS;
#1fdef CERCECUT
printf(" Open: tld ", sqlom.sqloode);
Seadif
return (int) salog.saloode:
int vlistf()
     ▼listf --- Fetch a row using the opened cursor U5 for list of ASAH assessments and their descriptions
    Boutine executes an fetch command for cursor US, which is assumed
     to have been opened, and then returns to the calling progrem with
     the ORACLE status code.
     Note: Modifications to this function may impact the related
             functions viisto() ulisto() that open close the cursor and, likely, any functions that call these utility programs
EXEC SQL FETCE US 1870 : wid, :workspace;
uid.arr[uid.les] = '\0';
workspace.arr[workspace.lem] = '\0';
Vifdef CEBCEDUT
printf(" Fetch: $1d ", sqlos.sqloods);
deadis
return (int) sqlcs.sqlcode;
ulists --- Close sursor US for ASAN table of contents
```

```
Boutine executes a close cursor command for cursor US and then
      returns to the calling program with the CRACLE status code.
      Note: Modifications to this function may impact the related
            functions ulisto() and ulistf() open the cursor and fotch
rows using it and, possibly, functions that call these
            utilities
 Bifdef CHRCHOUT
 printf("\avlisto ");
 MANC OGL CLOSE US;
 difdef CENCEDOT
 printf("Close: %ld ", sqlos.sqloods);
 Bondie
 return (int) sqloa.sqloods;
 stil.pc -- A few general stilities
     This file contains:
                 - displays expension of ORACLE error message
      STANCORED
                 - displays expension of ORACLE warning message
                 - returns time/date information
 ************************************
 discisse oproces .b
                               /* Header for calls to ME-DOS
 Ginglade (stdie.h)
 Sdefine SQLCA STORAGE CLASS extern
                               /* Switch for header files
 DIEC SOL BEGIN DECLARE SECTION:
                               /* All SQL declarations for this */
 EXEC SQL INCLUDE hostwars.h;
                               /* are in these two header files */
/* this one owner from "U" */
 EXEC SQL INCLUDE Saharris.h;
 EDEC SQL END DECLARE SECTION:
 MING SQL INCLUDE SQLCA;
 Sinclude "asan.h"
                              /* Standard ASAN Roader File
                                                          #/
Told expense ()
amponeg -- Empand Oracle Error Massage
*****************************
Bifdef CRECEDUT
  printf("\nt.70s\n", sqlca.sqlerms.sqlermc);
  HEDOMES:
  SLOUIS (sqlcs.sqlarm.sqlarms);
Scadif
word empower ()
expowrs -- Expend Oracle Marning Massage
****
if (sqlos.sqlwarn[1] == 'W')
       SLOUTER ("SQLWAREIES: Column Truncated");
if (sqlca.sqlwarm[2] - 'W')
       SLOUTER ("SQLMARSING: Null in aggregate");
if (sqlos.sqlwara[3] = 'H')
       SLOUTER ("SQLEARSING: INTO VAR Sount |= col count");
```

```
if (oglom.sqlwarm[4] = 'W')
showns ("sqlwarming: Update or Delete w/o ummu");
 if (sqloa.sqlwara[5] = 'W')
         SLOUTER ("SQLMARSTING: 77777");
 if (sqlos.sqlwarn[6] - 'W')
        SLOUTER ("SQLHEARTING: Rollback Required");
if (sqlos.sqluars(7) - 'W')
         SLOUTER ("SQLEARSHIEG: Change after query for UNDATE");
1
aloak -- Routine that returns the location of the string
                with the date and time of this very moment
*********************************
long now, time();
char *ctime(), *text;
Difdef CHRONOT
   pristf("\saloak ");
now = time (MULL) :
text = otime (&now) ;
text[24] = ' ';
return text;
VCAPITAL (x)
        WCAPITAL -- Convert a VARCHAR entered by user to uppercase
********************************
VARCHAR *E;
register int 1, j;
j = x->lea = strlea(x->err);
for (i=0; i<j; i++) z->arr[i] = toupper(z->err[i]);
se are a set of dummy routines while the program is under
     development. They will be removed in the production version.
************************
  -y()
SLOUTS ("This feature is not available in this prototype versioe");
dumy2 ()
SLOUTP ("This feature currently runs as a separate progrem.");
utmoonw.pd -- Routines dealing with the wonderful world of USM,
                DLG, GRASS and such
* This file contains:
  1. utm to lat/los conversion (CC_u2ll) routines
2. lat/los to utm conversion (CC_ll2u) routines
     CC u211 spheroid (spheroid name) must be called first, sets the
           spheroid parameters for the ellipse 'spheroid name' (see
```

```
get_spheroid.c for known spheroids). Function is used for conversions in either direction.
        OC_u2ll_spheroid_permeters (a,e) called by OC_u2ll_spheroid() to
set the allipsoid major axis 'a' and eccentricity squared 'e'
                can be called directly for unknown ellipsoids.
        CC_w2ll_wome (some) must be called before CC_w2ll_morth(). Set
                utn 'scae' (sust be non-zero). Hegative means southern
hemisphere. Used to set the longitude of the central
                meridian (only used for utn to let/los conversions)
        OC u211 morth (morth) set the utm morth. Must be called before
                C 1211.
        CC_w2ll (east, lat, los) computes lat, los from east after CC_w2ll_morth() has already been called with morth.
     3. miscellaneous user interface service routine
        logitude of COCKDINATE variable to seconds
                     deatmal
                 - Convert latitude of COORDINATE variable to seconds
                     decimal
                 - Convert an ALTSPEC VARIABLE's spec to units and altitude
        convocord - Convert the spherical coordinate character string of
                    a COORDINATE variable to decimal
        COOR2win - Convert COORDINATE decimal lat/lon to wine
 *****************************
 #include oprocess.b>
                                        /* Header for calls to ME-DOS
 dinalade cetdio.b>
 #include <ctype.h>
Sdefine SQLCA STORAGE CLASS extern
                                        /* Switch for header files
                                                                             */
MINEC SOL REGIN DECLARE SECTION:
                                         /* All SQL declarations are in
EXEC SQL DECLUDE hostwars.h;
                                         /* those header files
ROME SQL INCLUDE Charris.h;
EXEC DOL END DECLARS MICTION;
EXEC SQL INCLUDE SQLCA;
Singlade "agen.h"
                                         /* Standard ASAN Bonder File
#dofine abs(x) ((x)<0?-(x):(x))
#define RADIAMS_TO_SECONDS 206264.8062470964
$define SECONDS_TO_RADIAMS 4.849136811095360-6
double sqrt(), sin(), cos();
static double al, a2, a3, a4;
                                  /* Lat coef: geodetic to rectifying */
static double a5 = 5.0e5;
                                  /* false easting (O'ms) */
static double as:
                                  /* false northing */
static double a7 = 0:
                                  /* MOT */
static double as = .9996;
                                  /* Und scale factor at central meridian */
static double a9;
                                  /* central meridian in seconds */
static double al0;
                                  /* radius of curvature */
static double all, al2, al2, al4; /* lat coef: rectifying to geodetic */
static double als:
                                  /* major aris */
static double al6;
                                  /* eccentricity squared */
statia double b1,b2,b3,b4;
                                  /* intermediate values */
static double b5,b6,b7,b6;
static double b9, b10, b11, b12;
static struct ( cher *memo;
                  double a;
                                        /* semi-major axis */
                  double e;
                                        /* eccentricity squared */
                  } opheroid[] =
                      ( "australian",
                                           6378160.0,
                                                       0.0066945419,
                         "bessel",
                                           6377739.155, 0.0066743722,
                         "clark66".
                                           6378206.4, 0.006768658,
                         "clarkso".
                                           6379249.145, 0.0068035113,
                         "everest".
                                           6377276.345, 0.0066378466,
                         "international", 6378388.0, 0.00672267, "ugs72", 6378135.0, 0.006694317778
```

```
OC_get_spheroid --
                      Returns axis and excentricity squared
                       for the nemed spheroid. Return value
                       1 for success, 0 for failure to find
                       the spheroid is the list
 double *a, *e;
 ist a:
n = sixeof(spheroid)/sixeof(spheroid[0]);
printf("\nget_spheroid to from td entries ", neme, m);
 while (n--)
  if (equal (nume, spheroid[n].neme)) {
     ta = spheroid[n].a;
     *e = spheroid[a].e;
     return 1:
     #1fdef CEECEDOT
      printf(" found %d", n);
  Bifdef CHECKOUT
   printf(" not found");
   seture 0 ;
char * CC spheroid name (n)
     OC spheroid name -- Find the name of spheriod n in the list
if (a < 0 \mid | a >= sizeof(spheroid)/sizeof(spheroid[0])) return 0;
else return spheroid[n].nome;
static equal (a, b)
                  comparison between two character strings
(Forced to lowercase)
**********************
char *a, *b;
while (*a) if (loase (*a++) != loase (*b++)) return 0;
return "b == 0;
)
static char losse (c)
           -- Force character to lowercase
```

```
char c;
 if (a >= 'A' 66 a <= 'E') a += 'a' = 'A';
 int CC u211 spheroid (spheroid nume)
     OC u211 spheroid -- Set up spheroid persectors for UM to Let/Long
                         given a spheroid name
 cher *spheroid neme ;
 double a, a;
if (OC get_spheroid (spheroid name, &c, &e))
return OC u211 spheroid peremeters (a, e);
                                                /* Enous Spheroid */
 roturn -1:
                                                /* Unknown Spheroid */
int OC 1211 spheroid parameters (a, a)
OC_w2ll_spheroid_parameters -- Store the conversion parameters
                        gives axis and excentricity
double u.e;
double x. x2. x3. x4:
if (a < 0.0 || a < 0.0 || a > 1.0) return -2;
                                               /* illegal values */
a16 = a:
z = \{\{(a + (7.0/32.0) + 5.0/16.0) + a + .5\} + a + 1.0\} + a + .25;
32 = 2 * x;
23 = 2 * 22;
24 = 2 * 23;
/* coefficients to convert geodetic to rectifying latitude */
a1 = -(((x * (195.0/64.0) + 3.25) * x + 3.75) * x + 3.0) * x;
\begin{array}{lll} 32 & = & \left( \left( (1455,0/32.0) + x + 70.0/3.0 \right) + x + 7.5 \right) + x2; \\ 23 & = & -\left( (70.0/3.0) + x + (945.0/9.0) \right) + x3; \end{array}
m4 = (315.0/4.0) * m4;
/* coefficients to convert rectifying to geodetic latitude */
a11 = \{((7.75 - (657.0/64.0) * x) * x - 5.25) * x + 3.0) * x;
al2 = ((5045.0/32.0) * x - (151.0/3.0)) * x + 10.5) * x2;
al3 = ((151.0/3.0) - (3291.0/8.0) * x) * x3;
al4 = (109.0/4.0) * x4;
/* radius of curvature */
al0 = (((225.0/64.0) * x2 + 2.25) * x2 + 1.0) * (1.0 - x2) * (1.0 - x) * a;
return 1;
int OC u211 some (some)
OC u211 some
```

```
**************************
 /* set false morthing (m6), compute central meridian (m8) */
12 (some < 0) {
   a6 = 10.006:
   uts = 30.0 + mose;
   3
alse (
   46 = 0.0;
   utu = 30.0 - none;
as = (uts * 6.0 + 3.0) * 3600.0;
int OC u211 north (north)
 OC u211 porth
 double north:
double size, cosw;
double t, to, ra, ra2, ra4, ra6, ra8;
double etas;
b10 = ((morth - m6) / m8 + m7) / m10;
1f (abs (b10) > 1.47)
   return -1; /* rectifying let exceeds 1.47 radians, -84.15.30 */
sinw = sin (b10) ;
006W = 006 (b10);
bl2 m goew * goew:
bl1 = (((al4 * bl2 + al3) * bl2 + al2) * bl2 + al1) * sinw * cosw + bl0;
sinw = sin(b11);
006W = 006 (b11);
rm = sqrt (1.0 - a16*sinw*sinw) * 1.0e6 / a15;
rm2 = rm * rm;
rn4 = rn2 * rn2 ;
m6 = m2 + m4 ;
    = m4 * m4 ;
    = sinw/cosw;
20
    ....
stas = a16 * b12 / (1.0 - a16);
ъ1
   = EB/006W:
    b2
   = ((ts * 24.0 + etas * 8.0 + 29.0) * ts

+ etas * 6.0 + 5.0) * b1 * rn4 / 120.0;

= (((etas * 45.0 - 45.0) * ts + etas * 162.0 -90.0) * ts

-etas * 107.0 - 61.0) * t * rn6 / 720.0;
b5
26
    = -(((ts * 720.0 + 1320.0) * ts
                    + 662.0) * to + 61.0) * b1 * m6 / 5040.0 ;
    = (((ts * 1575.0 + 4095.0) * ts
                   + 3633.0) * ts + 1385.0) * t * ms / 40320.0;
return 1:
int CC u211 (east, lat, lon)
     00_1211
```

```
double east:
 double *lot, *loa;
 double b9, b10;
b9 = ({a5 - east) * 1.0e-6} / a8 ;

1f (abc(b8) > a15 * 2.0e-7)

return -1; /* utm easting to far from center of some */
b10 = b9 * b9 ;
 *let = ((((b0 * b10 + b6) * b10 + b4) * b10 + b2) * b10 + b11)
                                                    * RADIANS TO SECONDS ;
 *lon = (((b7 * b10 + b5) * b10 + b3) * b10 + b1) * b9
                                                    * RADIAMS TO SECONDS + a9 ;
return 1:
int GC lilu (let, lon, east, north, nome)
 double lst, lon;
double *east, *morth;
 int *some;
 int dog;
double simp, cosp;
double otns, t, ts, ra;
double c1,c2,c3;
 /* if some is |= 0, force into this some, otherwise compute the some */
if (*some == 0) {
   if (lon < 0) {
      dag = -lon / 3600;
   }
                                /* cesters somes */
       *some = 31 + deg / 6;
                                /* western scoor */
    also {
      deg = lon / 3600 ;
*xone = 30 - deg / 6;
   if (lat < 0) *some = -(*some) ;
          /* now, sat a6, a9 */
OC_u2ll_some (*some);
if (abs(lat) > 302400.0) return -1; /* latitude above 84 degrees */
b10 = (a9 - los) * SECONDS_TO_RADIAMS;
if (abs(b10) > .16) return -2; /* losgitude to far from center of wha some */
      = lat * SECONDS_TO_RADIAMS;
simp = sin (b9);
     = cos (b9);
= a15 / sqrt (1.0 - a16 * simp * simp);
-
      = simp / cosp;
      = cosp * cosp;
G2
      = a1 * a1;
al
      = al * a2;
otas = a16 * a1 / (1.0 - a16);
     = In * cosp;
      = (1.0 - ts + chas) * b1 * c1 / 6.0;
= ((ts - 16.0) * ts + 5.0 + (14.0 - 58.0 * ts) * ctas) * b1 * c2 / 120.0;
b5
      = (((179.0 -ts) * ts - 479.0) * ts + 61.0) * b1 * a3 / 5040.0;
b12 = b10 * b10;
*east = (((b7 * b12 + b5) * b12 + b3) * b12 + b1) * b10 * a8 + a5;
```

```
= m + al + t / 2.0;
       = (etas * (9.0 + 4.0 * etas) + 5.0 - ts) * b2 * c1 / 12.0;
       m ((ts - 50.0) * ts + 61.0 +
      (270.0 - 333.0 * te) * etas) * b2 * c2 / 360.0;

= (((543.0 - te) * te - 3111.0) * te + 1365.0) * b2 * c3 / 20160.0;
ba
 *morth = (((b8 * b12 + b6) * b12 + b4) * b12 + b2) * b12 +
            ((((a4 * c1 + a3) * c1 + a2) * c1 + a1) * simp * cosp + b9)
            # a10;
*morth = (*morth - a7) * a8 + a6;
roturn 1:
int logides (x)
logided -- Convert a COCKDINATE VARIABLE's longitude to
                      decimal (seconds of arc)
       Routine unpacks longitude of the structure, reformets it and them
       stores the reformatted and the converted value in the structure
COORDINATE *E;
double convocat();
register int 1;
#1fdef CRECKOUT
printf("\nloa2ded ");
Pendis
for (i = 0; i <14; i++) x->loa[i] = toupper(x->loa[i]);
if ((x->longitude = convocord(x->lon)) < OFF_ERRYE) {
  else x->eastings = -1.0e75;
lat2deg(x)
-- Convert a COORDINATE VARIABLE's latitude to
                      decimal (seconds of ard)
       Noutine unpacks latitude of the structure, reformats it and then
       stores the reformatted and the converted value in the structure
COORD THATH *2;
double convecord();
register int 1;
for (i = 0; i < 14; i++) x->lat[i] = toupper(x->lat[i]);
x->latitude = convocord(x->lat);
if (x->latitude < OFF_HARTE) (
  z->let[0] = ' ';
  if (x->letitude > 0.0) {
     if (x->latitude > 324000.0) {
    sLourns (" > 90 ");
    x->northings = -1.0e75;
     else z->lst[12] = 'H';
  else {
   if (x->latitude < -324000.0) {
       SLOUTED (" > 90 ");
       z->morthings = -1.0m75;
     also x->lat[12] = 'S';
```

```
else x->northings = -1.0e75;
int mitides(x)
-- Convert as ALTEPEC VARIABLE's spec to waits and
                       long integer velue
      Note: Use only to convert values at the time of entry or the status
              line message will make you wonder with great ameximent .....
ALTEPEC *x;
register int i, j;
for (i = 0; i < 10; i++) x->spec[i] = toupper(x->spec[i]);
j = strlea(x->spec);
z->altituda = 0;
for (1 = 0; 1 < j; 1++) {
   if (isspace (x->spec[i])) continue;
   if (isdigit(x->spec[i])) break;
if (x->spec[i] == 'A') {
    stropy(x->spec, "AS ASSS'D ");
    stropy(x->units, "TED");)
else SLOUTEP("Hot altitude");
   return 0;}
12 (1 - j) (
   SLOTTER ("No value");
   return 0;}
   t->eltitude = (10 * z->eltitude) + z->epec(i] - 48;
i++;} while (isdigit(x->epec[i]) && i < j);</pre>
for (; 1<5; 1++)
   if (lisspace(x->spec[i])) break;
1f (1 - j) {
   SLOUTER ("Reed Reference (MSL, AGL, SFC) or ASSIGNED");
   return 0;}
if (x->spec[i] = 'A') stropy(x->units, "AGL");
else if (x->spec[i] = 'M') stropy(x->units, "MSL");
else if (x->spec[i] == 'S') stropy(x->units, "STC");
alse return 0:
sprintf(x->spec, "404ld 4s", x->eltitude, z->units);
return 0:
double convocord(x)
                       -- Unpack a character string with a spherical
                           coordinate and return seconds of arc as a double
      Note: The character string will be reformatted to nnnwnn'nn.n"X (as in 112x30'24.5"N)
cher x[];
int 1, j, ideg = 0, imin = 0;
double t = 0.0;
j = otrlea(x);
for (1 = 0; 1 < j; 1++) (
                                                  /* Degroos */
  if (isspace(x[i])) continue;
if (isdigit(x[i])) break;
   SLOUTEP ("Not a coordinate");
   return (double) OFF_EARTE; }
1f (1 - 1) {
   SLOUTER ("No value");
return (double) OFF EARTE;}
```

```
ideg = (10 * ideg) + z[i] - 40;
    i++;} while (iedigit(x[1]) && i < j);
 if ((ideg > 180) {] ((x[i] != ' ') is (x[i] != 'D') is (x[i] != '\0') is (x[i] != -8))) {
    SLOUTER ("? Degrees"); return (double) OFF_HARTE;)
 15 (1 < 1-1) (
    144:
    for (; 1 < 5; 1++) {
                                              /# Minutes #/
       if (isspace(x[i])) continue;
       if (isdigit(x[i])) breek;
       SLOUTER ("? Minutes");
       return (double) OFF EARTE; }
    for { ;isdigit(x[i]) && i < j; i++) {
  inin = (10 * inin) + x[i] - 48;
    if ((inin > 60) ||
((x[i] != ' ') && (x[i] != 'H') && (x[i] != '\'') && (x[i] != '\or'))) {
       SLOOTER ("? Minutes"); return (double) OFF_EARTE; }
 12 (1 < 1-1) {
    1++;
    for (; 1 < j; 1++) {
      if (isspace(x[i])) continue;
       if (isdigit(x[i])) break;
       BLOUTEP ("? Seconds");
      return (double) OFF HARTH; }
    for (;isdigit(x[i]) && i < j;i++) (
      t = 10.0 * t + (double)(x[1]-48);
    if (x[i] = '.') {
     · 12 (1 < 1) (
         if (isdigit(x[i])) t += ((double)(x[i]-48))/10.0;
         1++;}
   1f (1 < 1) 1++;
for (; i < j; i++) {
   if (lisspace(x[i])) break;}
                                        /* Semisphere */
if ((i = j) {| (x[i] = 'H') }| (x[i] = 'H')) {
    sprintf(x, "403d *02d'*04.11f\" ", ideg, imin, t);
    return (3500.0 * (double) (ideg) + 60.0 * (double) (imin) + t);}
else if ([x[i] = '8') || (x[i] = 'B')) |

sprintf(x, *03d $02d $04.11f\" ", ideg, imin, t);

return (-(3600.0 * (double) (ideg) + 60.0 * (double) (imin) + t));)
SLOUTED ("? Homisphore");
return (double) OFF EARTH;
int 000021tm (x)
COORDUIN -- Convert a decimal latitude and longitude to the
                     corresponding win northing/eastings for an ASAN COORDINATE structure
COORD DEATE *x;
char *clock();
if ( (x->latitude < OFF EARTE) 66 (x->longitude < OFF EARTE) ) (
```

```
/* If it didn't work, then complain to the user */
    alse (
       SLOUTEP ("Coordinate conversion error");
       fprintf(dante, "\nes COORDINATE Conversion error", slock());
       fprintf(dante, "|a\t\t\tlet = %12.21f [%s]", x->lstitude, x->lst);
fprintf(dante, "\a\t\t\tloag = %12.21f [%s]", x->loagitude, x->loa);
 also I
   SLOUTER ("Fix bed coordinates first");
   1
 return (int) -1;
 assa.ps -- ASAF Main Program
              1. Opens the printer.
              2. Calls strtAMAN to astablish communication with COACLE
              3. Verifies that ASAH software is valid.
              4. Calls Winit to start the screen driver.
              5. At end of the session closes detabase and printer
                                                                          4/
 /=
 /* The usual stuff, of course */
/* Seeder for calls to MS-DOS */
 dinclude <stdio.b>
 #include oprocess.h>
 @include <string.h>
                                 /# String manipulation header #/
 displace <tipo.b>
 EXEC SQL BEGIN DECLARE SECTION;
 ECC SQL INCLUDE citvare.h;
 BURG BOL BED DECLARR MECTICE:
                                  /* SQL Communication Area
ENEC SQL INCLUDE SQLCA;
                                  /* Standard ASAN Beader file */
 Ginglude "agen h"
                                  /* In asan.pc it must be here */
                                  /* since we need to initialize */
                                      character arrays!
 main ()
 extern int IMA DEROG FEATURES;
 1st 1;
 static cher *legal_notice[11] =
 {"\B\B\B\B\t\t\t\t RESTRICTED RIGHTS LEGED\B\B",
  '\tUse, duplication, or disclosure is subject to restrictions\z",
 "/E
         as set forth in subdivision (b) (3) (ii) of the n",
 "\t Rights in Technical Data and Computer Software Clause\n",
 *1+1+
        at 52.227-7013 of the DOD FAR supplement.\n',
          10 MOULTON STREET\n",
 "\t\t\tBEN LABORATORIES INCORPORATED\z",
 "\t\t\t
      \t Combridge, MA 02238\n",
\t 617-873-3000\n\n\n",
User Interface Copyright (C) 1985, BMM Laboratories Incorporated\n",
 "\t\t\t
 */t/t/t
 "\t\t\t
           All Rights Reserved"};
 FILE *fopen();
 pra = fopea("pra", "a");
if (pra == NULL) (
    printf("\nCan't open printer!"); exit(128); }
 damta = fopea("chronfil.asf", "a");
if (damta == NULL) {
    printf("\nCan't open chronfile!"); exit(128); }
 printf("40[23", 27);
 for (i = 0; i < 11; i++) printf("ts", legal_notice[i]);
 to abort . \n\n");
 do {
    i = getak();
    } while (1 10 ' ');
```

```
printf("ASAH Citation module starting....");
 MEA DEBOG PRATURES = 1;
 stropy(cituid.arr, "INCOIRER/ALIGEIERI");
cituid.lea = strlea(cituid.arr);
more son commer : aituid;
if (sqlos.sqloods) (
   printf("\nCannot Start Citation Database Inquiry due to\n\n\n\n",
           sglos.sglerm.sglerme);
   emit (16);}
EDEC SQL SELECT COURT (extry awa)
                PROM headquarters .amimal list
                DFTO :peranipals:
Winit () ;
EXEC POL BOLLBACE WORK BELHASE;
arit (0);
 queryl.pc -- Routines for citation database retrieval without keywords
      This file contains:
              - Set up for a new search
- Select citations from the Suman area
      quetup
      queryh
      deerla
deerla
deerla
               - Select citations from the Animal area
              - Select citations from the Structures area
              - Select citations from the Modeling area
      drozan
               - Select based on (first few letters of) Writer's name
      quaryd
               - Select based on the range of Dates given
               - Select based on the occurrence of a phrase in the Title
                                     /* Header for calls to MS-DOS */
finaluda oprocess.h>
Scotine SGLCA STORAGE CLASS extern
                                    /* Switch for header files
EXEC BOL REGIS DECLARS SECTION:
HEEC SOL INCLUDE cityars.h:
ERRIC SQL MED DECLARM SECTION;
EDIEC SQL INCLUDE SQLCA;
                                      /* Standard ASAN Booder File
Singlado "agan.h"
EXEC SOL DECLARE C100 CURSOR FOR
                      SELECT entry num
                       FROM headquarters ditation search
MINE SQL DECLARE CIOI CURSOR FOR
                      SELECT q.cotry_num
                       FROM bondquarters citation search s, qual citi q
                       MERE s.entry num = q.entry num
AND s.human_area = 'T';
EXEC SQL DECLARE C102 CURSOR FOR
                      SHLECT q.entry_num
FROM headquarters.citation_search s, qual_cit2 q
                       MMERE s.ontry num = q.ontry num
AND s.humen area = 'T';
EXEC SQL DECLARE C200 CURSOR FOR
                     SELECT entry num
                      FROM headquarters . citation search
                       WHERE enimi area = 'T';
EXEC SQL DECLARS C201 CURSOR FOR
```

to a design of an agraphy of an arrandom programme and a contract of a companion of an anomaly the contract of a contract of the contract of a contract of the contract of the

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SELECT q.outry_ave FROM headquarters citation search s, qual cit1 q NEEDE s.eatry num = q.eatry num AND s.animl area = 'T';

MINEC SOL DECLARE CZOZ CURSOR FOR

SHLECT q.cotry_nen

FROM headquarters citation search s, qual cit2 q

NEERE o.entry_num = q.entry_num AND o.eniml_area = 'T';

MING SQL DECLARE C300 CURSOR FOR

SELECT certry ave

FROM headquarters ditation_search

THERE strue area = 'T';

MING SOL DECLARE CHOI CURSOR FOR

SELECT q.entry_num
FROM headquarters.citation_search s, qual_cit1 q

MEDI s.entry_num = q.entry_num AED s.strec_area = 'T';

ERRIC SQL DECLARE CHO2 CURSOR FOR

SELECT q.oatry awa

FROM headquarters ditation search s, qual dit2 q HEERE s.entry num = q.entry num AND s.strud_area = 'T';

EXEC SOL DECLARE CAOO CURSOR FOR

SELECT entry num

FROM headquarters.citation_search HREEE model_area = 'Z';

EXEC SOL DECLARE CAO1 CURSOR FOR

SELECT q.eatry num
FROM hoadquarters ditation search s, qual_dit1 q
WHERE s.eatry_num = q.eatry_num

AND s.model area = 'T';

EXEC SQL DECLARE C402 CURSOR FOR

SELECT q.entry_num
FROM headquarters.ditation_search s, qual_dit2 q

NMERE s.entry num = q.entry num AMD s.model_area = 'T';

EXEC SQL DECLARE C50s CURSOR FOR

SELECT authorne

FROM headquarters .author_list a

HEERE UPPER (author) LIKE :pettern;

ECCC SOL DECLARE CSOO CURSOR FOR

SELECT entry sum

FROM headquarters.author_citation_link

HEERE authornum = :authornum;

MING SOL DECLARE C501 CURSOR FOR

SELECT q.estry_sum

FROM headquarters author citation link 1, qual cit1 q MHERE 1.estry num = q.estry num AND 1.esthornum = :suthornum;

EXEC SQL DECLARE C502 CURSOR FOR

SELECT q.estry_num

FROM headquarters author citation link 1, qual cit2 q WHERE 1.entry num = q.entry num AND 1.euthornum = :authornum;

EXEC SQL DECLARE C600 CURSOR FOR

SELECT entry num

FROM headquarters ditation search

```
MEDIE deta pub >= :deta1
 MING SQL DECLARE C601 CURSOR FOR
                      SHLECT q.entry_num
                        FROM headquarters citation search s, qual citi q
                       WHERE s.entry num = q.entry num.
AND s.date_pub >= :date1
                         AND s.date_pub <= :date2;
 EXEC SQL DECLARS 0502 CURSOR FOR
                      SELECT q.estry_num
                        FROM headquarters ditation search s, qual dit2 q
                       NUMBER s.entry num = q.entry num
AND s.date_pub >= :date1
                         AMD s.date pub <= :date2;
EDEC SOL DECLARS C700 CURSOR FOR
                      SELECT CATTY BEE
                        FROM headquarters . citation titles
                       HEERE UPPER (title) LIEE :pettern;
 TOTAL SQL DECLARE C701 CURSOR FOR
                      SHLECT q.entry_aum
                        FROM headquarters ditation titles a, qual miti q
                       NAME OFFICE (c.title) LIKE :pettern;
MINE SOL DECLARS C702 CURSOR FOR
                      DELECT q. entry num
                       FROM beadquarters citation titles c, qual cit2 q
                       HHERE c.entry num = q.entry num
                         AND UFFER (c.title) LIKE :pettern;
int quetup ()
quetup -- start-up routine that clears all temporary tables
                     for intermediate pointers in queries
 difdef CHECKOUT
  printf("\mqsetup ");
Annate
SLOTT("Furging obsolete qualifier lists");
EXEC SQL DELETT FROM QUAL_CIT1;
if (sqlam.sqloods)
   if (sqlca.sqlcode |= SQL_BOT) {
      ENDOCHEG:
      SLOUTS ("to", sqlca.sqlcrma.sqlcrma);
      exit (16);}
#ifdef CRECKOUT
  alse printf("\ngualifying table1 cleared *ld", sqlca.sqlcode);
Boadif
MEEC SQL DELETE FROM QUAL CITE;
if (sqlos.sqloods)
  if (sqloa.sqloods != SQL BOF) {
      BEDOMES:
      SLOUTP ("4s", sqlcm.sqlermac);
      exit (16) ; }
Hifdef CHECKOUT
  alse printf("\ngualifying table2 cleared %id", sqlca.sqlcode);
Sendif
EXEC SOL COMMIT WORK:
qual entries = 0;
                                     /* No qualifying entries */
temptabl = 0:
                                     /* No temporary table */
/* No date */
dates1 = dates2 = 0;
selcrit[0] = '\0';
                                     /* No search path
animals = marmainals;
                                     /* ALL Animals ...
olddepth = 0;
contram [0] = '\0';
```

```
majorat[0] = '\0';
minorat [0] = '\0';
address [0] = '\0';
setaff(6):
return (int) 0;
-- Create the subset of aitstices for the titles that
               pertain to the EURAN area
1mt 1;
Hifdel CHECKOTT
 printf("\nqueryh ");
Bondse
SLOUT ("Ruman Aron Sourch");
stroet (selcrit, "Roman ");
switch (temptebl) {
  00.50 0:
     MORE SQL OFFEE C100;
     if (sqlca.sqlcode) (
        ENDOMEG;
        SLOUTS ("CURSOR C100");
        SLOUTS ("%s", sqlom.sqlorms.sqlorms);
     qual_entries = 0;
     for (;;) (
        MICE SQL FETCE C100 into : sausb;
        if (sqlos.sqloods = SQL_NOF) break; if (sqlos.sqloods) {
          SLOUTP ("CURSOR C100");
          SLOOM ("ts", sqlca.sqlarm.sqlarme);
       EXEC SQL DESERT DETO QUAL CIT1 (entry aux) VALUES (:enumb);
       if (sqlos.sqloods) (
          SLOUTS ("ts", sqlca.sqlerms.sqlermc);
       fifdet CERCEDOT
          printf("\nAccepted ");
          for (i = 0; i < 5; i++) printf("4c", caumb.arr[i]);
       Pondie
       qual entries++;
       HERVALS ();
    MINC SQL COMMIT WORK;
    MINTEC SQL CLOSE C100;
    temptabl = 1;
 case 1:
    MIEC SQL DELETE FROM QUAL CITE;
    EXEC SQL COMMET WORK;
    MINEC SQL OF BE C101;
    if (sqlca.sqlcode) (
       EMDOMES;
       SLOUTE ("CURSOR C101");
       SLOUTS ("4s", sqlcs.sqlarms.sqlarms);
    qual_estries = 0;
    for (;;) {
      MANGE SQL FETCE C101 into :entenb;
      if (sqlcs.sqlcode = SQL_EOF) break; if (sqlcs.sqlcode) (
         SLOOTP ("CURSOR C101");
         SLOUTP ("4s", sqlos.sqlorum.sqlorumo);
         orit (16);
      EXEC SQL INSERT INTO QUAL CIT2 (entry num) VALUES (:enumb);
```

```
if (sqlom.sqloods) (
              SLOUTS ("4s", sqlos.sqlerms.sqlerms);
              emit (16);
           fifted CERCHOOT
             printf("\ahocepted ");
for (i = 0; i < 5; i++) printf("%o", enumb.arr[i]);</pre>
           @endif
          qual cotrice++;
          HERVALS ();
       MINE SQL CHART WORK;
MINE SQL CLOSE C101;
       temptabl = 2;
     0240 2:
       MING SQL DELETE FROM QUAL CIT1;
       HOUSE SQL COLSETT WORK;
       EXCEC SQL COMES C102;
       if (sqloa.sqloods) (
          IMPONSO:
          SLOUZS ("CURSOR C102");
          SLOUTP ("4s", sqloa.sqlorm.sqlorme);
          azit (16);
       qual_entries = 0;
       for (;;) (
          MINIC SQL FERCH C102 into :enumb;
if (sqloa.sqloods == SQL_BOF) break;
if (sqloa.sqloods) {
             SLOUTS ("CURSOR C102");
             SLOUTS ("4s", sqlos.sqlerms.sqlerms);
             exit (16);
         EXEC SQL DESERT INTO QUAL CITI (entry num) VALUES (:enumb);
         if (sqlom.sqloods) {
             SLOUTS ("to", sqlos.sqlerm.sqlerma);
             arit (16);
         difdef CERCEOUT
            printf("\nAccepted ");
            for (1 = 0; 1 < 5; i++) printf("to", caumb.arr[i]);
         Peadif
MENVALS();
         qual_estrice++;
      EXEC SQL COMMIT WORK;
      MORE SQL CLOSE C102;
      temptabl = 1;
      breek;
   default:
     bed_temp();
difdet CEBCEDUT
   printf(" *d entries in table *d", qual_entries, temptabl);
   SLOUTS ("Ack");
Bend1 F
return (int) qual_entries;
querys -- Create the subset of citations for the titles that
               pertain to the AFREL area
Sifdef CHECKOUT
  printf("\nquerya ");
```

```
SLOUT ("Animal Area Search");
street (selerit, "Animal ");
switch (temptabl) {
  case 0:
     BOOR SOL COME C200;
      if (sqloa.sqloods) (
        SLOUTS ("CURSOR C200");
        DOMES;
         SLOUTS ("4s", sqlos.sqlerms, sqlerms);
      qual_cetrics = 0;
      for (;;) {
        HIEC SQL FETCE C200 into :caush;
        if (sqlos.sqloods == SQL_BOF) breek;
if (sqlos.sqloods) {
           SLOUTS ("CURSOR C200");
            EXCOMES:
           SLOTT ("4s", sqloa.sqlorm.sqlorma);
        EXEC SQL INSERT INTO QUAL CIT1 (entry num) VALUES (:enumb);
        if (sqlos.sqloods) (
            SLOUTP ("4s", sqlca.sqlarm.sqlarmc);
        qual_cotrics++;
     EXEC SQL COMMETT WORK;
     TOTAL SOL CLOSE C200;
     temptabl = 1;
     break:
  onse 1:
     MERC SGL DELETE PROM QUAL_CIT2;
     MINE SQL COMMET WORK;
     MANUE SQL OFFER C201;
     if (sqloa.sqloods) (
        SLOUTS ("CULSOR C201");
        SLOUTS ("ts", sqlos.sqlerms.sqlerms);
     for (;;) (
        EDEC SQL PETCH C201 into :enumb;
        if (sqlos.sqloods - SQL BOF) break;
        if (sqlos.sqloods) (
            SLOUTS ("CURSOR C201");
           SLOTTS ("%s", sqlos.sqlerms.sqlerms);
        EXEC SQL INSERT ISTO QUAL CIT2 (entry num) VALUES (:enumb);
        if (sqlos.sqloods) (
           SLOOM ("ts", sqlos.sqlorm.sqlormc);
        qual_entries++;
     MINEC SQL COMMIT WORK;
     MINEC SQL CLOSE C201;
     temptabl = 2;
     brook:
  0059 2:
     EXEC SQL DELETE FROM QUAL CITI;
     MINE SQL COMMIT WORK:
     EDOSC SQL 09788 C202;
     if (sqlos.sqloods) {
        SLOUIS ("CURSOR C202");
        HINDOMS;
        SLOUTS ("to", sqlca.sqlerma.sqlerma);
     qual_entries = 0;
     for (;;) {
       MANEC SQL FERCE C202 into :enus
       if (sqlos.sqloods -- SQL_ROF) break; if (sqlos.sqloods) {
          SLOUTS ("CURSOR C202");
           EDCMAN,
           SLOUTS ("40", sqlca.sqlcrmc);
       EREC SQL ISSERT ISTO QUAL CIT1 (entry num) VALUES (:commb);
       if (sqlca.sqlcode) (
```

```
SLOUTS ("4s", sqlcs.sqlerm.sqlerme);
      EME BOL COMMET BORK:
      EXEC SQL CLOSE C202;
      temptabl = 1:
   defenit.
     bed temp ();
  printf(" *d cetrics in table *d", qual_entries, temptabl);
Bendir
return (int) qual estrice;
int querys ()
quarys -- Creete the subset of citations for the titles that
               pertain to the STRUCTURES area
***********************
Biffed CHRCHOIT
  printf("\aquerys ");
SLOUT("Structures Area Search");
struct (selurit, "Struct ");
switch (temptabl) {
  case 0:
     EDEC SQL 0988 0300;
     if (sqlos.sqloods) {
        SLOUTS ("CURSOR C300");
        EDCOMO:
        SLOUTS ("%s", sqlos.sqlerms.sqlerms);
     qual_catrics = 0;
     for (;;) {
       EXEC SQL FERCH C300 into :entmb;
        if (sqlos.sqloods - SQL_BOF) break;
       if (sqlca.sqlcode) {
          ENDOMS;
          SLOUTS ("CORSOR C300");
          SLOUTS ("4s", sqlca.sqlarms.sqlarms);
       EXEC SQL DESERT DETO QUAL_CIT1 (outry_aum) VALUES (:onumb);
       if (sqlca.sqlcode) {
          MOUTE ("ts", sqlca.sqlerm.sqlerme);
       qual_astrics++;
    EXEC SQL COMMET WORK:
    EXCEC SQL CLOSE CHOO;
    temptabl = 1;
    brook:
 000e 1:
    MINEC SQL DELETE FROM QUAL CITZ;
    EXEC SQL COMMIT WORK:
    EREC SQL OPER C301;
    if (sqlca.sqlcode) {
sLcors("cursor cioi");
       ESCOMESO;
       sloom (**s*, sqlca.sqlcrm.sqlcrmc);
    qual_estries = 0;
    for (;;) (
       EXEC POL FERCE C301 into :enumb;
      if (sqlos.sqloods = SQL EOF) breek;
if (sqlos.sqloods) {
         SLOUTP ("CORSOR C301");
         EDOORG;
```

```
moors ("4s", sqlos.oqlorus.sqlorus);
          EXEC SQL ISSEST INTO QUAL CIT2 (entry num) VALUES (:enumb);
          if (sqlos.sqloode) (
             SLOOM ("te", sqlos.sqlerm.sqlerma);
          qual_cotricc+i;
       MODEC SQL COMMIT WORK;
       MORE SQL CLOSE C301;
       break;
    Case 2:
      EXEC SQL DELETE FROM QUAL CIT1;
EXEC SQL COMMIT WORK;
       HOUSE SQL 09187 C302;
       if (sqlos.sqloods) (
          SLOUTS ("CURSOR C302");
          DOM:
          SLOUTE ("4s", sqloa.sqlorma.sqlormac);
       qual_astries = 0;
       for (;;) (
          EDISC SQL FERCE C302 into :comb;
         if (sqloa.sqloods == SQL_BOF) break;
if (sqloa.sqloods) {
    SLOUTP("CURSOR CHO2");
            SLOUIS ("ts", sqloa.sqlerms.sqlerms);
         EXEC SQL DESERT DITO QUAL_CIT1 (extry_num) VALUES (:enumb);
         if (sqlon.sqloods) {
            SLOUTS ("ts", sqlos.sqlorms.sqlorms);
         qual_catrics++;
      MINE DOL COMMET WORK:
      HITEC SQL CLOSE C302;
      temptabl = 1;
      break:
   default:
      had_temp();
difdef CERCHOTT
   printf(" *d entries in table *d", qual_entries, temptabl);
Sendif
return (int) qual_entries;
ist querys ()
querys -- Create the subset of citations for the titles that
                pertain to the MODELING area
********************************
Sifes CENCEDOT
  printf("\nquerym ");
SLOUT ("Model Aren Search");
strust (selerit, "Model ");
switch (temptabl) (
  0840 0:
     HARE SQL OFFEE C400;
     if (sqloa.sqloods) {
slooms("comson c400");
        ENDOMES;
        SLOUTS ("4s", sqlca.sqlerma.sqlerma);
```

```
for (;;) (
       MING SQL FERCE C400 into :caumb;
       if (sqlom.sqloods == SQL EOF) break;
if (sqlom.sqloods) {
          SLOUTS ("CURSOR C400");
           mancama;
          SLOUTP ("4s", sqloa.sqlorms.sqlorms);
       EXEC SQL IESERT ISTO QUAL_CIT1 (entry_num) VALUES (:enumb);
       if (sqlos.sqloods) {
          BEDCESS;
          SLOUTS ("%s", sqloa.sqlorms.sqlorms);
    EXEC SOL COMMIT WORK:
    EXEC SQL CLOSE C400;
    temptabl = 1:
    brook:
 case 1:
    MESC SQL DELETE FROM QUAL_CITZ;
    EXEC SQL COMMET WORK;
    EXEC SQL OFFEE C401;
    if (sqlas.sqloods) (
       SLOUTP ("CORSOR C401");
       EECOMO;
       SLOUTF ("te", sqlos.sqlerm.sqlerme);
    qual cotrice = 0:
    for (;;) {
       EXEC SQL FETCE C401 into :enumb;
       if (sqlos.sqloods == SQL BOF) break;
if (sqlos.sqloods) {
    sLOOTS ("CURSOR C401");
          ENDOMES;
          SLOUTP ("4s", sqlom.sqlerrm.sqlerrme);
       HISC SQL INSERT INTO QUAL_CIT2 (entry_aum) VALUES (:enumb);
      if (sqlca.sqlcode) {
          SLOUTP ("4s", sqloa.sqlorm.sqlormc);
       qual_catrics++;
    EXEC SQL COMMENT WORK;
    EXEC SQL CLOSE C401;
   temptabl = 2;
onso 2:
   EXEC SQL DELETE FROM QUAL CIT1;
   EXEC SQL COMMITT WORK:
   MANUE SQL OFFER C402;
   if (sqlca.sqlcode) {
      BLOUTP ("CURSOR C402");
      ESPONSO.
      SLOUTS ("4s", sqloa.sqlerms.sqlerms);
   qual entries = 0;
   for (;;) (
      EXEC SQL FETCE C402 into :enumb;
      if (sqlom.sqloods == SQL_BOF) break;
if (sqlom.sqloods) {
         SLOUTE ("CURSOR C402");
         EEDCHIO;
         SLOUTS ("4s", sqlca.sqlarms.sqlarms);
      ENEC SQL INSERT INTO QUAL CIT1 (entry num) VALUES (:enumb);
      if (sqlcm.sqlcode) (
         SLOUTP ("4s", sqlom.sqlerma);
      qual_estrics++;
  MICHE SQL COMMET WORK;
   EXEC SQL CLOSE C402;
   temptabl = 1:
default:
```

```
difdef CHBCHOOT
   printf(" %d entries in table %d", qual_entries, temptabl);
   nd1f
return (int) qual_entries;
int quarys ()
     querys -- Create the subset of citations for the author(s) whose
                 neme(s) look like the pettern given in "authornem"
register int i, j;
Sifdef CHECHOUT
   printf("\mqmaryw ");
for (i = 0; i < authornem.len; i++) {
   if (authornem.arr[i] != ' ') break;
   for (j = 1; j < authornem.len; j++)</pre>
      authornem.arr[j-1] = authornem.arr[j];
   authornes.lea--;
   authornes.arr[authornes.les] = '\0';
   difdef CEBCEOUT
      printf("\nts (tu)", authornem.arr, authornem.lem);
      SLOUTP ("Ask");
   Beadif
if (!authornes.lee) return (int) -1;
stropy (pattern.arr, authornes.arr);
street (pettern.arr, "%");
patters.lea = strlea(patters.arr);
for (i = 0; i < pattern.len; i++) pattern.arr[i] = toupper(pattern.arr[i]);
SLOUT("Author Search");
stroat (selerit, pattern.err);
REED POL COTES CSO:
if (sqlos.sqloods) (
   EXDOMES;
   SLOUTS ("to", sqloa.sqlorms.sqlorms);
   exit (16);
qual cotrics = 0;
if (temptabl - 1) (
  EXEC SQL DELETE FROM GUAL CITZ;
alsa (
  EXEC SQL DELETE FROM QUAL CIT1;
EXEC SQL COMMIT WORK;
EXEC SQL FETCH C50s into :authornum;
if (sqlca.sqlcode) {
  if (sqlca.sqlcode != SQL_ROF) {
      MEDCHAG;
      SLOUTS ("CURSOR C50s");
      SLOUTP ("4s", sqloa.sqlorm.sqlormo);
      exit (16);
      )
olee (
      difdet CHECKOUT
         printf("\nComparing table %d for Author number ", temptabl);
         for (i = 0; i < 5; i++) printf("*c", authornum.arr[i]);
      gendi!
      switch (temptabl) (
      case 0:
```

bed_temp();

```
MANUEL BOIL 09/201 C500;
    if (sqlos.sqloods) {
       SLOUTS ("CURSOR CSOO");
       SLOUTS ("te", sqloa.sqlorm.sqlorms);
       omit (16) :
   for (;;) {
       EXEC SQL FEECE C500 into :enumb;
       if (sqlos.sqloods - SQL_BOF) break;
       if (sqlos.sqloods) {
          SLOOTS ("CURSOR CB00");
         INSPONSE:
          SLOUTS ("ts", sqlom.sqlorms.sqlorms);
          omit (16);
       BURG SQL INSERT ISTO QUAL_CIT1 (entry aum) VALUES (:enumb);
       if (sqlos.sqloods) {
          SLOUTP ("ts", sqlos.sqlorms.sqlormso);
          exit (16);
       Sifder CRECEDUT
         printf("\nAccepted ");
          for (1 = 0; i < 5; i++) printf("4a", earnb.arr[1]);
       Sendif
       EXEC SOL COMMET WORK:
      if (sqlos.sqloods) (
          SLOUTP ("ts", sqlos.sqlorm.sqlorme);
          azit (16) ;
      qual_entries++;
   EXEC SQL CLOSE C500;
   brook;
case 1:
   EXTEC SQL OFFER C501;
   if (sqloa.sqloode) {
      SLOUTP ("CURSOR C501");
      SLOUTS ("to", sqlom.sqlormsc);
   for (;;) {
      MORE SQL FRICE C501 into :enumb;
      if (sqlos.sqloode — SQL BOF) breek;
if (sqlos.sqloode) {
         SLOUTS ("CURSOR C501");
         manage .
         SLOUTS ("4s", sqloa.sqlorms.sqlorms);
         amit (16) ;
      EXEC SQL IMMERT INTO QUAL CIT2 (entry num) VALUES (:enumb);
      if (sqlos.sqloods) {
         SLOUTS ("4s", sqlos.sqlorm.sqlorme);
      Bifdef CHECKOUT
         printf("\nAscepted ");
for (i = 0; i < 5; i++) printf("%s", caumb.arr[i]);</pre>
      MING SQL COMMIT WORK;
      if (sqloa.sqloods) {
         HEDOMAG;
         SLOOTS ("ts", sqlcs.sqlerm.sqlermsc);
         azit (16);
      qual estrics++:
      MENVALS () ;
  EREC SQL CLOSE C501;
  break;
0050 2:
  ECOC SQL OPEN C502;
  if (sqlos.sqloods) {
     BEDOMES;
     BLOUTS ("CURSOR C502");
     SLOOTS ("4s", sqlca.sqlerms.sqlerms);
     amit (16) ;
```

```
}
for (;;) {
            MINEC SQL FETCE C502 into :enumb;
            if (sqlca.sqlcode = SQL BOF) breek;
if (sqlca.sqlcode) {
               SLOUTP ("CURSOR CS02");
               SLOOM ("ts", sqlon.sqlerms,sqlerms);
               amit (16) ;
            EDEC SQL IMMENT INTO QUAL_CIT1 (catry_num) VALUES (:count);
            if (sqlos.sqloods) {
               INDOMS;
               SLOUTS ("4s", sqloa.sqlorm.sqlormo);
               oxit (16);
            difdet CERCEDUT
               printf("\nAccepted ");
               for (i = 0; i < 5; i++) printf("%a", enumb.arr[i]);
            REES SQL COMMET WORK;
            if (sqlos.sqloods) {
               EDOMO;
               SLOUTS ("4s", sqloa.sqlerma.sqlerma);
               exit (16) ;
            qual entrios++;
            MENVALS () ;
         MINE SOL CLOSE C502;
         brook:
      default:
         bed_temp();
      EXEC SQL FETCE C50s ISTO : authoraus;
      ) while (!sqlca.sqlcode);
   if (sqlos.sqloods != SQL BOF) (
      ENDOMEG;
      SLOUTP ("CURSOR C50s");
      SLOUTS ("4s", sqloa.sqlorms.sqlorms);
      amit (16);
EXTEC SQL CLOSE CSOS;
  printf("\aOld table %d", temptabl);
Boards
temptabl = (temptabl + 2) + 1;
#1fdef CERCEOUT
  printf(" %d outries in table %d", qual_entries, temptabl);
return (int) qual_outries;
int queryd()
quaryd -- Create the subset of citations for citations that were
               published between two years
Sifder CHECKETT
printf("\nqueryd ");
@endif
if (dates1 > dates2) {
                                   /* Check on the order of the dates */
  if (dates2) (
     sprintf (date1.err, "46d", dates2);
                                               /* They are out of order */
     sprintf(date2.arr, "$4d", dates1);}
  else {
     sprintf(date1.arr, "$4d", dates1);
stropy(date2.arr, "2000");}
                                             /* Only one date entered */
also (
  if (dates2) (
                                   /* There is a second data specified */
     sprintf(date1.arr, "44d", dates1);
                                                /* They are in order */
     sprintf(date2.arr, "$4d", dates2);}
```

```
/* They are both sero! (or negative) */
   alse return (int) -1;
datal.len = data2.len = 4;
stroat (selexit, "/");
street (selerit, datel.err);
stroat (selerit, "/");
streat (selerit, date2.err);
SLOUT("Date Search");
#1fdef CHBCHOUT
 printf(" Dates to and to", datel.arr, datel.arr);
ewitch (temptabl) {
   CO.S. 0:
     MINE SQL OFFER C600;
      if (sqlos.sqloods) {
         SLOUTS ("CURSOR C600");
         BEDOMSG;
         SLOUTE ("4s", sqloa.sqlarma.sqlarma);
      qual_entries = 0;
      for (;;) {
         BEENC SQL PERCE C600 into :enumb;
         if (sqlos.sqloods = SQL_ROF) break;
if (sqlos.sqloods) {
            SLOUTS ("CORSOR C600");
            DOMES;
            SLOUTS ("4s", sqloa.sqlorms.sqlorms);
         EDGC SQL INSERT INTO QUAL_CIT! (entry aum) VALUES (:eaumb);
         if (sqloa.sqloode) {
            EMPOWERS:
            SLOUTP ("to", sqloa.sqlorms.sqlorms);
         qual_estrics++;
     MINEC SQL COMMITT WORK;
     MINE SOL CLOSE CSOO;
     temptabl = 1;
break;
   0000 1:
     EDEC SQL DELETE FROM QUAL CITE;
     REEC SQL COMMETT WORK;
     EXCEC SQL OPER C601;
     if (sqlos.sqloode) (
         SLOUTS ("CURSOR C601");
         EMPONSO -
         SLOUTS ("4s", sqlca.sqlerm.sqlermc);
     qual entries = 0;
     for (;;) (
         BEEC SQL FERCE C601 into :enumb;
        if (sqlos.sqloods = SQL_EOF) break;
if (sqlos.sqloods) {
           SLOUTS ("CURSOR C601") :
            SLOUTS ("4s", sqlca.sqlerms.sqlerms);
        EXEC SQL DESERT DETO QUAL_CIT2 (entry_num) VALUES (:enumb);
        if (sqlos.sqloods) {
            SLOUTS ("%s", sqlca.sqlerms.sqlermsc);
        qual_estries++;
     EIEC BOL COLACT WORK:
     BEEC SOL CLOSE CEOL:
     temptabl = 2;
break;
  case 2:
     EXEC SQL DELETE FROM QUAL_CIT1;
     EXEC SQL COMMET WORK;
     EXEC SQL OFEN C602;
     if (sqloa.sqloods) {
        SLOUZP ("CURSOR C602");
        MIDOMEG;
        SLOUTE ("4s", sqlos.sqlerms.sqlerms);
     qual_entries = 0;
```

.

```
for (;;) {
           MANG BOL FERCH C602 into : count);
           if (sqlos.sqloods - SQL BOF) break;
           if (sqlms.sqlcode) {
sncore("conson csore);
              SLOTTE ("ts", sqlos.sqlorms.sqlorms);
           MING OGL INSERT INTO QUAL CIT1 (catry am) VALUES (:caush);
          if (sqlon.sqloods) (
             BARDONING .
             SLOUTS ("4s", sqlos.sqlorum.sqlorumo);
       MING DOL COMMET WORK;
       MINEC SQL CLOSE C602;
       temptabl = 1;
       break:
       bod temp ();
 #ifdef CHICHOTT
    printf(" td entries in table td", qual_entries, temptabl);
    210
 return (int) qual estries;
 quaryt -- Create the subset of citations for the titles that
                 tain the phrase given in "title frag"
 *******************************
 register int i, j;
 Bifdef CERCHOTT
   printf("\nqueryt ");
 Bondif
 titlefrag.lea = strlea(titlefrag.arr);
 for (1 = 0; i < titlefrag.len; i++) {
   if (titlefrag.arr[i] != ' ') break;
   for (j = 1; j < titlefreg.len; j++)
      titlefreg.arr[j-1] = titlefreg.arr[j];
   titlefrag.len--;
   titlefrag.arr[titlefrag.lea] = '\0';
   difdet CERCEOUT
   printf("\n*u *s", titlefrag.lea, titlefrag.arr);
if (!titlefrag.lon) return (int) -1;
stropy (pottern.arr, "4");
stroot (pottern.arr, titlefreg.arr);
streat (pattern.arr, "+");
pottern.len = strien (pottern.arr);
for (i = 0; i < pettarn.len; i++) pettarn.arr[i] = toupper(pettarn.arr[i]);
street (selerit, petters.arr);
difdef CHRCHOTZ
  prints("\tu to", pattern.len, pattern.arr);
SLOUT("Title Search");
switch (temptabl) {
   GREG 0:
     EXCEC SQL OFFEE C700;
      if (sqloa.sqloods) (
        SLOUTS ("CORSOR C700");
        EDOMS:
        SLOUTS ("ts", sqlos.sqlerms.sqlerms);
      qual_entries = 0;
     for (;;) {
Enter SQL FERCE C700 into :enumb;
        if (sqlca.sqlcode - SQL_EOF) break;
        if (sqlos.sqloods)
           SLOUSS ("CURSOR C700");
```

```
EMPORAGE:
              SLOUTS ("4s", sqlca.sqlerm.sqlerme);
           EDGC SQL DESDG DETO QUAL_CIT1 (ontry_aum) VALUES (:commb);
           if (sqlos.sqloods) {
              SLOOTS ("to", sqlca.sqlerm.sqlerme);
           qual_catrics++;
       BURC SQL COMMUT WORK;
       MINE BOL CLOSE C700;
       temptabl = 1;
       breek;
    ooso 1:
       HORSE SQL DELETTE FROM QUAL CITY;
       EXEC SQL OFFER C701;
       if (sqloa.sqloods) (
          SLOUTP ("CURSOR C701");
          maponess;
           SLOUTS ("to", sqloa.sqlorms.sqlorms);
       qual_entries = 0;
       for (;;) (
          EXEC SQL FETCE C701 into :enumb;
          if (sqlox.sqloods = SQL BOF) break;
if (sqlox.sqloods) (
             SLOUTS ("CURSOR C701");
             BEDOMEG:
             SLOUTS ("4s", sqlos.sqlerm.sqlerma);
          MINEC SQL DISERC 1870 QUAL_CIT2 (oatry_aum) VALUES (:commb);
          if (sqlog.sqloods) {
             SLOUTS ("40", sqloa.sqlerms.sqlerms);
          qual_catrics++;
       EXEC POL COMMETT WORK;
       MIRC SQL CLOSE C701;
       temptabl = 2;
    0989 2:
      MEEC SQL DELETE FROM QUAL CITI;
MING SQL COMMIT WORK;
       EXCEC SQL OFFER C702;
       if (eqlos.sqloods) (
          SLOUTS ("CORSOR C702");
          SLOUTS ("%s", sqloa.sqlerm.sqlerme);
       for (;;) {
         EXEC SQL FETCE C702 into :enumb;
         if (sqlca.sqlcode == SQL_BOF) break;
if (sqlca.sqlcode) {
    sLCOTF("CORSOR C702");
             SLOUTS ("to", sqlca.sqlerms.sqlermc);
         EXEC SQL INSERT INTO QUAL_CIT1 (entry awa) VALUES (:caumb);
         if (sqlos.sqloods) (
             SLOUTS ("te", sqlom.sqlerms.sqlermo);
      MENC SQL COMMIT WORK;
      temptabl = 1;
  default:
     bed_temp();
Alfdef CERCHOUT
  printf(" %d entries in table %d", qual_entries, temptabl);
Bondie
```

```
return (int) qual_entries;
int bed temp ()
 char meg[60];
 sprintf(mag, "Bad temporary table identifier %5d used!", temptabl);
SLOUTER (mag);
 exit (16):
 quaryul.pd -- Routines for citation database retrieval in the
.
      This file contains:
disclude oprocess.h>
                                   /* Beader for calls to ME-DOS */
 ∯include <stdio.b>
#include <ctype.b>
Minfine SQLCA STORAGE CLASS exters
                                  /* Switch for header files
RESC SQL DEGIS DECLARS SECTION:
EXEC SQL INCLUDE altvars.h;
VARCHAR foo [14];
                                   /* Dumy for uniqueness fetches
EXEC SQL END DECLARS SECTION:
REEC SQL INCLUDE SQLCA:
Sinclude "agen.h"
                                   /* Standard ASAN Seeder File
EFEC SQL DECLARE CAOOL CURSOR FOR
                    SELECT and id, and none
                     FROM hondquarters .nainel list
                     WHERE amal nome LIKE :animal;
EREC SOL DECLARE CA002 CURSOR FOR
                    SELECT anal asse, apal id
                     FROM headquarters animal list
                     WHERE smal id LIEE :pottors
                     ORDER BY anal id, anal name;
EXEC SQL DECLARE CA100 CORSOR FOR
                     SELECT amal_id
                      FROM beedquarters animal list
                      WHERE and id LIKE :pettern;
REDC SQL DECLAPE CAllO CURSOR FOR
                     SELECT o. ontry num
                      FROM headquarters . animal_effects e
                      WHERE and id - : nextannl;
MESC SQL DECLARS CAll! CURSOR FOR
                     SELECT o. entry num
                      FROM beadquarters animal effects o, qual citl q
                     MAEDE c.ontry num = q.entry num
AND annl 1d = :nortennl;
EDDC SQL DECLARE CAlls CURSOR FOR
                     SELECT o. ostry_sus
                     FROM beadquarters animal efforts a, qual cit2 q
RMIRE a cotry num = q.cotry num
AND axel id = :nextsuel;
int mkenmlet()
```

203

```
mkammist -- Create the subset of animals that belong to the next
                level down in the taxonomy table
cher *clock();
FILE *txtblkf, *fopes();
int accent, depth, i, lowdepth;
statio char *dots[] = {* *, *. *, *.. *, *... *};
difdet CHBCHOUT
  printf("\maknumlst ");
Bendif
if ( (txtblkf = fopen("txtblk\\varaniml.txt", "w")) = EULL) (
  SLOUTER ("Error creeting next level help window");

fprintf(dante, "\n*s could not open animal textblock file", clock());
   return (int) DUFLICATE OBJECT;
MINE SOL OFFER CAOOL;
                                          /* Find the "object" */
if (sqlos.sqloods) {
   HENDOMOG;
   SLOUTE ("CURSOR CA001");
   SLOUTS ("4s", sqlca.sqlarm.sqlarma);
account = 0;
lowdepth = 16;
for (::) {
  EXEC SQL FETCE CA001 NETO :anal id, :thisbeast;
   if (sqlos.sqloods - SQL_EOF) break;
   if (sqlos.sqloode)
     HENCHIG:
     SLOUTS ("FETCE CA001");
     SLOUTP ("ts", sqlos.sqlarms.sqlarms);
  thisbeest.arr[thisbeest.len] = '\0';
  diffet CERCENTE
     anal id.arr[amal id.lea] = '\0';
     printf("\manimal_id is %s", anal_id.arr, thisbeast.err);
  Bonds #
  fprintf(txtblkf, "Animals below to are:\n\a", thisbeast.arr);
  sprintf(workspace.arr, "Looking for Animals below to ", thisbeast.arr);
  SLOUT (workspace.arr);
  for (1 = 6; 1 > 0;) {
                                          /* Where are we? */
    if ((amal_id.arr[i] != '0') || (amal_id.arr[i-1] != '0')) break;
     1 - 2;}
  depth = 1;
  if (depth < olddepth) continue;
if (lowdepth > depth) lowdepth = depth;
  Bifder CHICKOUT
    printf(" depth 4d", depth);
  Bondif
  if (depth < 6) {
                                         /* You can't go further than that */
     for (1 = 0; 1 <= depth; 1++)
     patterm.arr[i] = anml_id.arr[i];
patterm.arr[i] = '%';
     pattern.lea = i+1;
       pettern.arr[pettern.len] = '\0';
        printf(" Pattern is %s", pettern.arr);
     Bondie
     MARC SQL OFFER CA002;
                                            /* What also is there like it #/
     if (sqlos.sqloods) {
       MEDCAMOG;
        SLOUTS ("CURSOR CA002");
        MADOTO ("%s", sqlca.sqlerma.sqlermac);
     for (;;) (
       EXEC SQL FETCE CA002 DETO :anniness, :nextarml;
        if (sqloa.sqloode) breek;
     #1fdef CRECEOUT
       nextanni.err[nextanni.len] = '\0';
```

```
ominese.arr[aminese.lea] = '\0';
         printf("\afound to to", nextagel.orr, amalesse.arr);
     Boadif
         if (!strnicep(nextanal.arr, smal_id.arr, 10)) continue;
         for (1 = 6; 1 > 0;) (
         if ((northwellarr[i] t= '0') || (northwellarr[i-1] t= '0')) brook;
     Aifdef CHRCKOUT
       printf(" included");
     Boodis
         amineme.arr[annineme.lem] = '\0';
fprintf(txtblkf, "%s %s\a", dots[i/2], amaineme.arr);
      if (sqlos.sqloods i= SQL_ROF) {
         ENDOLES;
         Sprintf (deste,
                 "\nts ts\s\t\t\t looking for animals like ts",
                 clock(), sqlca.sqlcrm.sqlcrmc, animal.arr);
      fprintf(txtblkf, "\a\a");
      EXCEC SQL CLOSE CA002;
if (sqloa.sqloode != SQL_BOF) (
   fprintf (dasta,
           "\a4s 4s\a\t\t\t looking for sainals like 4s",
           clock(), sqlcs.sqlcrms.sqlcrms, aminal.arr);}
fprintf(tatblkf,
                       - EE --\z");
folose (txtblkf);
 sprintf(workspace.arr, "td entries of td for ts", account, animals, animal.arr);
 difdet CERCEOUT
 SLOUTS (workspace.arr);
 Sendif
if ((lowdepth != 16) && (lowdepth > olddepth)) olddepth = lowdepth;
if (olddepth < 8) olddepth += 2;
return (int) account;
int queryull()
quaryall -- Find the animal of "species 1" in the taxonomy table
int 1:
#Lidef CHECKOUT
  printf("\nqueryul1 ");
Bondif
olddenth = 0:
                                 /* Current Search depth is sero */
                                 /* Current animal not yet defined */
amal_id.arr[0] = '\0';
amal_id.les
species1.lea = strlea(species1.arr);
for (i = 0; i < species1.len; i++) {
    animel.arr[i] = species1.arr[i];
    if (isspace(species1.arr[i])) break;</pre>
if (1 == 0) return (int) 0;
                                       /* Animal not entered */
unimal.nrr(i) = '4'; i++;
animal.arr[1] = '\0';
enimal.les = 1;
if (animals = mkarmist()) {
                                                 /* Find the second level */
   HEW_SCREEN("akeyalt");
   ADD WINDOW("speciatry", 5, 1);
   return (int) 0; }
}
int queryal2()
```

```
queryal2 -- Find the snimel of "species 2" in the taxonomy table
 int count. 1:
 difdet CENCEDUZ
   pristf("\squeryel2 ");
   die
species2.lea = strlea(species2.arr);
for (i = 0; i < species2.lea; i++) {
    animel.arr[i] = species2.arr[i];</pre>
   if (isspace(species2.arr[i])) break;
 1f (1 1= 0) {
                                 /* Animal entered ? */
   animal.arr[1] = '4'; 1++;
   animal.arr[i] = '\0';
   onimal.lea = 1;
   if (count = mkammlet()) {
      animals = count;
      REMOVE WINDOW();
      MEN_SCREEN ("akeyalt");
      ADD WINDOW ("speciatry", 6, 1);
      roturn (int) 0; }
 REMOVE WINDOW();
 HER SCHEIM ("akeysrch");
ist queryal3()
      queryal3 -- Find the animal of "species 3" in the taxonomy table
int count, 1:
difdef CERCEDOT
  printf("\nqueryal3 ");
Bondie
species3.len = strlen(species3.arr);
for (i = 0; i < species3.len; i++) {
   animal.arr[i] = species3.arr[i];</pre>
   if (isspace(species).arr[i])) break;
1f (1 l= 0) {
                           /* Animal entered ? */
  (1 is 0) {
asimal.arr[1] = '$'; 1++;
animal.arr[1] = '\0';
   animal.lea = i;
  if (count = mkanmlst()) {
     animals w count:
     REMOVE WINDOW();
     HEW SCREEN ("akeyelt");
     ADD WINDOW("speciatry", 7, 1);
     return (int) 0;}
REMOVE WIEDOW();
HEW SCREEN ("akeyerch");
int quoryal4()
      quaryal4 -- Find the animal of "species 4" in the terronomy table
int count, 1;
```

```
Sifdef CHRCHOTZ
   printf("\aquerya14 ");
  goodif
 for (1 = 0; 1 < species4.len; 1++) {
    animal.arr[1] = species3.arr[1];
    if (isspace(species4.arr[1])) breek;
 1£ (1 1= 0) (
                             /* Aminal contered ? */
    ominal.arr[i] = '%'; i++;
    animal.arr[1] = '\0';
    animal.les = 1;
    if (count = mknamlet()) {
      animals - count;
      }
 RESOVE_WISSON();
 MEN SCREEN ("akeysrah");
 int asrabooz()
 asrch002 - Search based on extrice where as Animal is select
 #1.fdef CHECKOUT
 printf("\masrah002 ");
 Pendif
 if (querya()) (
   if (quaryt()) (
      if (queryd()) (
MENVALS();
         querya10();
      3
   3
   RVALE ();
if (iqual entries) {
SLOUTEF("Bo entries metching these criteria were found");
   roturn (int) 0;}
olse (
   if (|malisto()) (
     ADD_WINDOW("citdispaction", 19, 1);}
   roturn (int) 0;}
ist querys10()
     queryal0 - Select citations that deal with specific animal(s)
1mt 1:
printf("\nqueryu10 ");
if (olddepth == 0) return (int) qual_entries;
stracpy(pettern.arr, amalid.arr, (unsigned int) (olddepth-2));
pettern.arr[olddepth-1] = '*';
pettern.arr[olddepth] = '\0';
pettern.len = strlen(pettern.arr);
streat(selerit,pettern.arr);
Difdef CHECKOUT
  amal_id.arr[amal_id.len] = '\0';
```

```
printf("\nts, use to characters for ts", amml_id.arr, 1, pattern.arr);
SLOUT ("Specific Animal Search");
ENTEC SQL OFFEE CA100;
#1fdef CHECKOUT
   if (sqlca.sqlcode) {
      SLOUTS ("CORSOR CA100");
       EDOMS:
       SLOUTS ("4s", sqlon.sqlorm.sqlorma);
qual entries = 0;
EXEC SQL PETCE CA100 into :nexternl;
if (sqlos.sqloods - sql BOF) (
   MINE SOL CLOSE CA100;
   roturn (int) qual_entries;}
if (sqlos.sqloods) {
   BEDOMSG;
   SLOUTS ("THICK CA100");
   SLOUTS ("4s", sqlos.sqlerms.sqlerms);
   if (temptabl = 1) {
    RESC SQL DELETE FROM QUAL_CIT2;}
   also if (temptabl == 2) {
     MESC SQL DELETE FROM QUAL CITI;}
   EXEC OGL COMMET WORK;
difdef CERCEDUT
  partauml.arr(nartauml.len] = '\0';
printf("\nTaron %s", nartauml.arr);
Dendis
  switch (temptabl) (
     -
        BOOK SQL OFFER CAllO;
         if (sqloa.sqloods) (
           SLOUTS ("CORSOR CAllO");
            ENDOWS ;
            SLOUTS ("ts", sqlca.sqlerm.sqlerme);
         for (;;) (
           MING SQL FETCE CAllO into :enumb;
            12 (sqlos.sqloods - SQL_BOF) break;
           if (sqlca.sqlcode) (
              SLOOTS ("FETCE CALLO");
               HEDOMEG;
               SLOUTS ("4s", sqloa.sqlerma.sqlerma);
           EREC SQL SELECT entry num
                      FROM quel cit1
           MIERE entry num = :enumb;

1f (sqlom.sqloode = SQL_EOF) {
              EXCEC SQL INSERT INTO QUAL CITI (entry num) VALUES (:enumb);
              if (sqlos.sqloods) {
                 SLOUTS ("IMSERT Table 1");
                 SLOTE ("to", sqlos.sqlarm.sqlorms);
              diffet CRECEOTE
                 camb.arr[10] = '\0';
                 printf("\nts qualifies", enumb.arr);
              EXEC SQL COMMET BORK;
              qual_entries++;
             MEHVALS ();
       MODEC SOL CLOSE CA110;
    case 1:
       EXCEC SQL OPEN CA111;
```

```
if (sqloa.sqloods) (
              SLOUTS ("CURSOR CAll1");
              SLOUTS ("4s", sqlca.sqlarm.sqlarms);
           for (;;) {
              MING SQL FERGE CAll! into : equab;
              if (sqlom.sqloods - sql BOF) breek;
if (sqlom.sqloods) {
                 SLOUTS ("FETCE CALLL");
                 SLOUTP ("ts", sqlos.sqlerm.sqlermo);
              MINE SOL SELECT COLTY DES
                         FROM qual_ait2
                         MINE entry nos = :comb;
              if (sqlos.sqloods - SQL BOF) {
                 EXEC SQL DESERT DETO QUAL CITY (entry aux) VALUES (:ontab);
                 if (sqloa.sqloods) {
                    ENDONS;
                     SLOUTS ("40", sqloa.sqlarma.sqlarma);
                 difdef CERCEDOT
                    caumb.arr[10] = '\0';
printf("\n%s qualifies", caumb.arr);
                 REEC SQL COMMIT WORK;
                 qual cotrice++;
                 HENVALS ();
          MONTH SQL CLOSE CA111;
          brook;
       G040 2:
          MINISC SQL OFFER CAll2;
          if (sqlos.sqloode) {
              SLOUTE ("CORSOR CA112");
              SLOUTS ("4s", sqlos.sqlorms.sqlorms);
          for (;;) {
             MIRC SQL FETCH CAll? into :enumb;
             if (sqlos.sqloods == SQL BOF) break;
if (sqlos.sqloods) {
                SLOOTS ("FRICE CAll2");
                 HINDOHAG -
                 SLOUTS ("4s", sqlca.sqlerms.sqlerms);
             REEC SQL SELECT entry and
                        FROM qual citi
                         1370 : foo
                        WHERE entry num = : caush;
             if (sqlca.sqlcode = SQL ROT) (
EXEC SQL ISSERT INTO QUAL CITI (entry num) VALUES (:enumb);
                if (sqloa.sqloods) (
                   SLOOTS ("to", sqlos.sqlorms.sqlormo);
                #1fdef CEBCHOUT
                   causb.arr[10] - '\0';
                   printf("\n4s qualifies", coumb.err);
                HIEC SQL COMMET WORK;
                qual_entries++;
         MODEC SQL CLOSE CAll2;
         break;
      default:
         bed temp();
   MINE SQL PETCE CA100 DITO : nexternal;
   } while (!sqlca.sqlcode);
if (sqlos.sqloods != sql Bor) (
   ENDOMES:
   SLOUTS ("FETCE CA100");
   SLOOM ("4s", sqlca.sqlerma.sqlerma);
```

```
temptabl = (temptabl + 2) + 1;
 EXEC SQL CLOSE CA100;
    printf(" td cotrice in table td", qual_entrice, temptabl);
 Bendie
 return (int) qual_catrice;
 queryhl.pc -- Boutines for citation database retrieval in the
                       human area using keyword set 1
       This file costoins:
 dinglude oprocess.b>
                                        /* Seader for calls to MS-DOS
 finalude (stdio.b)
 @define SQLCA STORAGE CLASS extern /* Switch for header files
 EXEC SQL BEGIN DECLARS SECTION;
 mone son memors attends h.
 MORE SOL HED DECLARE SECTION:
 EXEC SQL INCLUDE SQLCA;
 Singlado "acan.h"
                                        /* Standard ASAN Honder File
 static char far *hoursors[] = {
 "SELECT entry num FROM headquarters ditation search WHERE h annoyand = 'T'",
 "SELECT q.outry aum FROM headquarters citation search s, qual citi q\
 WHERE s.estry num = q.entry num AMD s.h ennoyand = 'T'"
 "SELECT q.estry num FRCM headquarters citation search s, qual_cit2 q\
WHERE s.estry_num = q.estry_num AND s.h_annoyanc = 'T'",
 "SELECT entry num FROM headquarters citation search MEERS h psychley = 'T'",
 "SELECT q.entry_num PROM headquarters ditation_search s, qual_dit1 q\
WHERE s.entry_num = q.entry_num AND s.h_psychlqy = 'T'",
 "SELECT q.estry_num FROM headquarters.citation_search s, qual_cit2 q\
 MERE s.entry num = q.entry num AND s.h psychloy = 'T'"
"SELECT entry num FROM headquarters ditation search WEERE h physical = 'T'",
"SELECT q.estry_num FROM beadquarters.citation_secreb s, qual_cit1 q\
 NEEDE s.eatry num = q.eatry num AND s.h physical = 'T'"
"SELECT q.entry new FROM headquarters.citation_search s, qual_cit2 q\
 WHERE s.entry num = q.entry num AND s.h physical = 'T'",
"SELECT entry num FROM headquarters ditation search WHERE h sleep = 'T'",
"SELECT q.eatry num FROM headquarters ditation search s, qual mitl q\
 WHERE s.entry num = q.entry num AND s.h_sleep = 'T'"
"SELECT q.eatry_num FROM headquarters.citation_search s, qual_cit2 q\
WEERE s.eatry_num = q.eatry_num AND s.h_sleep = 'T'",
"SELECT entry num FROM honoquarters ditation search wants h speech = 'T'",
"SELECT q.entry num FROM headquarters.citation_search s, qual_cit1 q\
 WHERE s.eatry num = q.eatry num AHD s.h speech = 'T'"
"SHLECT q.entry_num FROM headquarters.citation_search s, qual_cit2 q\
MERRS s.entry_num = q.entry_num AND s.h_speech = 'T'",
"SELECT entry non FROM headquarters.citation_search MMERE h_perfranc = 'T'",
"MEERS q.entry_num FROM headquarters ditation_search s, qual_dit1 q\
WHERE s.entry_num = q.entry_num AMD s.h_perfranc = 'T'",
"SELECT q.entry num FROM headquarters citation search s, qual_cit2 q\
WHERE s.entry num = q.entry num AND s.h performs = 'T'");
```

```
int hourseffeet:
int queryhi()
         .,
    queryhl -- Create the subset of citations for the titles that
            pertain to the MUNIN area and also select the effect
            at level 1
difdet CERCEDOT
 printf("\mqueryb1 ");
Sandie
SLOOT ("Ruman Aron");
switch (off2orch(0)) {
  case 0: break;
  case 1: queryh11(); breek;
  case 2: queryh12(); brook;
  case 3: queryh13(); breek;
  case 4: queryh14(); breek;
  case 5: queryh15(); break;
case 6: queryh16(); break;
fifdet CHECHOTZ
  default: sprintf(workspace.arr, "Invalid Ruman Rffact 4d", eff2srch[0]);
         SLOUTS (workspace.arr);
@cod1f
return (int) qual estrice;
int queryh11()
queryhil -- Create the subset of citations for the titles that
           pertain to the NUMAN area and also ANNOYANCE
#1fdef CERCHOUT
 printf("\mqueryhll ");
Peadif
street (selcrit, "Human Ann");
hoursoffset = 0;
roturn (int) queryhlz();
int queryh12()
/***************************
   queryhl2 -- Creete the subset of citations for the titles that
           pertain to the HUMAN area and also PSYCHOLOGICAL HEALTH
****************
 printf("\nqueryh12 ");
Bonds #
street (selerit, "?sychol");
hoursoffset = 3;
return (int) queryhix();
int quervhil()
   queryhl3 -- Create the subset of citations for the titles that
            pertain to the SUMAN area and also PEYSICAL MEALTH
difdef CEECEDOT
 printf("\nqueryh13 ");
```

Boadie

```
stroat (selerit, "Phys. Scelth");
hoursoffset = 6:
return (int) queryhlx();
int quaryhl4()
    quaryhld -- Create the subset of citations for the titles that
             portain to the HUMAN area and also HAMP INTERPRESENTE
Difdef CHECKOUT
  printf("\nqueryb14 ");
stroat (selerit, "Euman Sleep");
hoursoffset = 9;
return (int) queryhix();
int quaryh15()
    quaryh15 -- Create the subset of citations for the titles that
           pertain to the MMAN area and also SPEECE INTERFERENCE
Bifdef CERCEDOT
  printf("\aqueryh15 ");
stroat (selexit, "Speech");
hoursoffset = 12:
return (int) queryhlx();
int queryh16()
    quaryhl6 -- Create the subset of citations for the titles that
            pertain to the ECRAH area and also TASK PERFORMANCE
  printf("\nqueryhl6 ");
Bondif
street (selerit. "Ruman Parf") ;
hoursoffset = 10;
return (int) queryhlz();
int queryhlz()
queryhlz -- Actually do the search using hourseroffset
difdef CEECHOUT
 printf(" quaryhiz %d+%d ", hoursoffset, temptabl);
stropy(sqlstant.arr, hoursors[hoursoffset+temptabl]);
sqlstmat.len = strlen(sqlstmat.arr);
EXEC SQL PREPARE D1 FROM : sqlstmat;
if (sqlos.sqloods) {
  ENEDCOMOG;
  SLOUTS ("Frepare CED");
  SLOOTS ("4s", sqlos.sqlerms.sqlerms);
  axit (16) ;
```

```
EXEC SOL DECLARE CED CURSOR FOR D1:
 BEEC SQL OFFE CED;
 if (sqlca.sqlcode) {
   BLOUTS ("Open CHD");
   SLOUTS ("4s", sqlos.sqlorum.sqlorume);
 qual_cotrice = 0;
 for (;;) {
   BUISC SQL FERCE CED into : enumb;
   if (sqlos.sqloods = SQL BOF) break;
   if (sqlca.sqlcode) (
      MEDCHEG:
      SLOUIS ("Total CED");
      SLOOTP ("4s", sqloa.sqlarm.sqlarme);
   if (temptabl == 1) {
      MING SQL DESERT DATO QUAL CITY (costry arm) VALUES (:cosmb);
   alse (
     EXEC SQL IMSERT INTO QUAL_CIT1 (extry num) VALUES (:caumb);
   12 (sqlos.sqloods) {
       SLOUTS ("Insert after CED");
       SLOUTS ("to", sqloa.sqlerma.sqlerma);
       exit (16);
   qual entries++:
   HEWVALS () ;
   EXEC SQL COMMET WORK;
MIND SQL CLOSE CED;
temptabl = (temptabl & 2) + 1;
Sifdet CRECEDUT
   printf(" *d extrice in table *d", qual_extrice, temptabl);
Sendif
roture (int) qual extrice;
queryh2.pc -- Routines for citation database retrieval in the
                 human area using keyword set 2
      This file contains:
***************************
dincinde oprocess.h>
                                    /* Header for calls to MS-DOS
#inalude <stdio.b>
#define squck storage chass extern
                                   /* Switch for header files
EXEC SQL REGIE DECLARE SECTION:
MING SQL INCLUDE cityors.h;
MING SQL MED DECLARE SECTION;
REEC SQL INCLUDE SQLCA;
                                   /* Standard ASAH Seeder File
static char far *h2cursors[] = {
SKIECT d.entry num FROM headquarters citation details d,\
headquarters ditation search s WHERE d.entry num = s.entry num
AND d.aircraft - 'T' .
"SELECT q.entry_num FROM headquarters.citation_details d, qual_cit1 q,\
headquarters ditation search s WHERE seatry num = q.entry sum\
AND d.entry num = q.entry num AND d.aircraft = 'T'',
"SELECT q.estry_num FROM bondquarters.citation_details d, qual_cit2 q,\
```

and the second second

)

- headquarters.citation_search s WHERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.entrant = 'T'",
- "SELECT d.entry non FROM beadquarters.citation_details d,\
 beadquarters.citation_search s WHERE d.entry_num = s.entry_num\
 d.ms blast = 'T'",
- "SHIECT q.entry num FROM headquarters.citation_details d, qual_cit1 q,\
 headquarters.citation_search s WHERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.ns_blast = 'T'",
- "MELECT q.entry num FROM beadquarters.ditation_details d, qual_dit2 q,\
 beadquarters.ditation_search s WHERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.as_blast = 'T'",
- "SELECT entry num FROM beadquarters ditation details d,\
 headquarters.ditation search s WHERE d.entry num = s.entry num\
 d.ms seismic = 'T'",
- "SELECT q.entry num FROM headquarters.citation_details d, qual_citl q,\
 headquarters.citation_search s WHERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.ns_seismic = '7'",
- "SELECT q.entry num FROM headquarters.citation_details d, qual_cit2 q,\
 headquarters.citation_search s HEERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.ns_sciente = '7'",
- "SELECT entry num FROM headquarters citation details d,\
 headquarters citation search s WHERE d.entry num = s.entry_num\
 d.ns_soniobs = 'T'",
- "MELECT q.eatry_num FROM headquarters.citation_details d, qual_cit1 q,\
 headquarters.citation_search s RMERE s.entry_num = q.entry_num\
 AND d.eatry_num = q.entry_num AND d.as_sociobs = 'T'",
- "SELECT q.entry num FROM headquarters ditation details d, qual dit2 q,\
 headquarters ditation search s WHERE s.entry num = q.entry num\
 AND d.entry num = q.entry num AND d.ms_sonichm = 'T'",
- "SELECT d.entry num 'FROM headquarters ditation details d,\
 headquarters ditation search s WHERE d.entry num = s.entry_num\
 AND d.ms_terrain = 'T'',
- "MELECT questry num FROM headquarters ditation details d, qual ditl q,\
 headquarters ditation search s WHERE s.eatry num = questry num\
 AND d.eatry num = q.eatry num AND d.es terrain = 'T'",
- "SELECT q.entry_num FROM beadquarters.citation_details d, qual_cit2 q,\
 beadquarters.citation_search s WHERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.ms_terrain = 'T'",
- "SELECT d.entry num FROM headquarters.citation_details d,\
 headquarters.citation_search s RMERE d.entry_num = s.entry_num\
 d.traffiq = 'T'".
- "SELECT q.entry num FROM headquarters.citation_details d, qual_citl q,\
 headquarters.citation_search s WHERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.traffic = 'T'",
- "SELECT q.entry num FROM headquarters.citation_details d, qual_cit2 q,\
 headquarters.citation_search s NEERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.traffic = "T"",
- "SELECT entry num FROM headquarters.citation_details d,\
 headquarters.citation_search s WHERE d.entry_num = s.entry_num\
 d.wind nso = 'T'".
- "SELECT q.eatry num FROM headquarters.citation details d, qual citl q,\
 headquarters.citation_search s WHERE s.eatry num = q.eatry_num\
 AND d.eatry_num = q.eatry_num AND d.wind_nse = 'T'",
- "SELECT q.eatry_num FROM headquarters.citation_details d, qual_cit2 q,\
 headquarters.citation_search s WHERE s.entry_num = q.entry_num\
 AND d.entry_num = q.entry_num AND d.wind_nse = "T"",
- "SELECT entry num FROM headquarters.citation_details d, \
 headquarters.citation_search s WHERE d.entry_num = s.entry_num\
 d.othr nse = '7'",
- "MELECT q.entry num FROM headquarters.citation details d, qual citi q,\
 headquarters.citation search s WHERE s.entry num = q.entry num\
 AND d.entry_num = q.entry_num AND d.othr_nso = 'Z'',

```
"SKLECT q.entry_num FROM headquarters.citation_details d, qual_cit2 q,\
headquarters.citation_search s WHERE s.entry_num = q.entry_num\
AND d.entry_num = q.entry_num AND d.othr_nee = '7'"};
  int oursoroffset;
 int queryh2()
  quaryh2 -- Create the subset of citations for the titles that
               pertain to the HUMAN area and also select the effect
               at level 2
 Difdef CHECKOTT
   printf("\aqueryh2 ");
 SLOUT ("Rumen Aree");
 switch (officerch[1]) {
   case 0: breek;
   case 1: quoryh21(); breek;
   case 2: queryh22(); breek;
   case 3: queryh23(); break;
   case 4: queryh24(); breek;
case 5: queryh25(); breek;
case 6: queryh26(); breek;
   case 7: queryh27(); break;
   case 8: queryh28(); break;
 Bifdet CERCEDOT
   default: sprintf(workspace.arr, "Invalid Eumen Effect 4d", aff2srch[1]);
          SLOUTS (werkspace.arr);
 Pondis
 return (int) qual entries;
 int queryh21()
 queryhil -- Create the subset of citations for the titles that
          partain to the Monas area and also Aircraft Hoise
diffet Checkour
  printf("\aqueryh21 ");
streat (selerit, "Aircraft");
cursoroffset = 0;
return (int) queryh2x();
int queryh22()
queryh22 -- Create the subset of citations for the titles that
             partain to the NUMB area and also Blast Hoise
***********************
difdef CHECKOUT
 printf("\nqueryh22 ");
-
street (selerit, "Blast");
cursoroffset = 3;
return (int) queryh2x();
```

```
int queryh23()
/accessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionereccessionerecces
    queryh23 -- Create the subset of citations for the titles that
         pertain to the MOMENT area and also Seismin
Bifdef CHECKOUT
  printf("\nqueryh23 ");
street (selerit, "Seisnie");
cursoroffset = 6;
retura (int) quaryh2x();
int queryh24()
    quaryh24 -- Create the subset of citations for the titles that
         pertain to the NUMBAN area and also Socia Boom
#1fdef CRECEDUT
  printf("\nqueryh24 ");
Bondif
stract (selexit, "Boom");
cursoroffset = 9;
return (int) quoryh2x();
quaryh25 -- Create the subset of ditations for the titles that
             pertain to the MUNCH area and also Terrain
     Revision Eistory:
     1.00 02/04/88 mhr
                        1. Creation
#1fdef CERCEOUT
  printf("\nqueryh25 ");
Pondif
street (solurit, "Terrain");
cursoroffset = 12;
return (int) queryh2x();
int queryh26()
    queryh26 -- Create the subset of citations for the titles that
             pertain to the EUROR area and also Traffic
ifdet CHECKOUT
  printf("\nqueryh26 ");
Bonds F
streat (selerit, "Traffic");
cursoroffset = 15:
return (int) queryh2x();
ist queryh27()
/*****************************
   quaryh27 -- Creete the subset of citations for the titles that
            pertain to the EUMAN area and also Wind Noise
```

```
Bifdef CHECKOUT
  printf("\nqueryh27 ");
street (selerit, "Wind");
cursoroffset = 10;
roturn (int) quoryh2x();
ist queryh20()
    queryh28 -- Creete the subset of ditations for the titles that
          partain to the HUNAN area and also Other Noise
difdef CHECKOOT
  printf("\mqueryh28 ");
Seadif
street (selerit, "Other");
cursoroffset = 21;
reture (int) queryhiz();
int queryh2x()
    queryhix -- Actually do the search using hoursoroffset
printf(" queryhlz 4d+4d ", cursoroffset, temptabl);
stropy(sqlstmnt.arr, h2cursors[cursoroffset+temptabl]);
sqlstmnt.lea = strlea(sqlstmnt.arr);
EDEC SQL PREPARE D1 FROM : sqlstmat;
if (sqlas.sqloods) {
  ENDONESS:
  SLOUTP ("Prepare CED");
  SLOUTS ("4s", sqlcs.sqlerms.sqlerms);
  exit (16);
MEEC SQL DECLARE CED CURSOR FOR D1;
MORE SOL OF THE CHE!
if (eqlos.eqloode) (
  INDOMS:
  SLOUTS ("Open CED");
SLOUTS ("4s", sqloa.sqlarms.sqlorms);
qual_entries = 0;
for (;;) {
  MONG SQL FETCH CHD into ;enumb;
if (sqlca.sqlcode = SQL_NOF) break;
if (sqlca.sqlcode) {
     SLOUTS ("Tetch CED");
     MOUTE ("4s", sqlos.sqlorm.sqlorme);
  if (temptabl = 1) {
    EMBC SQL INSERT INTO QUAL_CIT2 (entry_num) VALUES (:enumb);
    EDEC SQL INSERT INTO QUAL_CIT1 (entry_num) VALUES (:enumb);
  if (sqlos.sqloods) {
      EROOMSG:
      SLOUTS ("Insert after CED");
```

```
SLOOTP ("4s", sqlos.sqlorum.sqlorumc);
        exit (16) :
    qual entries++;
    EXEC SQL COMMET WORK;
    HENVALS ();
BOOK SOL CLOSE CED:
 temptabl = (temptabl + 2) + 1;
   printf(" *d entries in table *d", qual_entries, temptabl);
 return (int) qual catrice;
 queryhl.pc -- Routines for citation detabase retrieval in the
                       human area using keyword set 3
       This file costeins:
/# Header for calls to MM-DOS
diacinde orocess.h>
Singlado Cotdio.h>
Sdefine SQLCA STORAGE CLASS extern
                                         /* Switch for header files
EXEC SQL BEGIN DECLARE SECTION:
EXEC SQL INCLUDE cityars.h;
EXEC SOL MED DECLARE SECTION:
REEC POL INCLUDE POLCA;
Singlade "agen. h"
                                         /* Standard MEAN Honder File
static char for "hloursors[] = {
"SELECT d.entry num FROM headquarters.citation_details d,\
headquarters.citation_search s REERE d.entry_num = s.entry_num\
 AMD d.field ampt = 'T'",
"SELECT q.entry num FROM bendquarters.citation_details d, qual_cit1 q,\
 hasdquarters.citation search s NHERE s.entry num = q.entry num\
AND d.entry num = q.entry num AND d.field_expt = '7'",
"MELECT q.entry_num FROM beadquarters.citation_details d, qual_cit2 q,\
 headquarters ditation search s WHERE s.entry num = q.entry num \
AND d.entry num = q.entry num AND d.field_expt = 'Z'',
"SELECT d.eatry_num FROM headquarters.citation_details d,\
 beadquarters.citation_search s WHERE d.catry_num = s.catry_num/
 d.lab ampunt = 'T'",
"SELECT q.entry_num FROM bendquarters.citation_details d, qual_cit1 q,\
headquarters ditation search s WHERE s.eatry num = q.eatry num > AMD d.lab_expunt = 'T'',
*SELECT q.entry_num FROM headquarters.ditation_details d, qual_dit2 q,\
 headquarters.citation_secret = MMERE s.cetry_num = q.cetry_num/
AND d.ontry awa = q.ontry awa AND d.lab expent = 'T'",
"SELECT entry num FROM headquarters ditation_details d,\
 beadquarters ditation search s WHERE d.eatry num = s.eatry num/
 review art = 'T'",
*SELECT q.ontry_num FROM beadquarters.citation_details d, qual_cit1 q,\
headquarters.citation search * WHERE s.entry num = q.entry num\
AND d.entry num = q.entry num AND d.roview art = 'X'",
"SELECT q.entry_num FROM headquarters.citation_details d, qual_cit2 q,\
headquarters.citation_search s WHERE s.entry_num = q.entry_num/
AND d.entry_num = q.entry_num AND d.review_art = 'T'",
*SELECT entry num FROM headquarters.citation_details_d,\
headquarters.citation_search_s_WEERE_d.antry_num = s.entry_num\
proposl ar = 'T'",
"SELECT q.entry_num FROM headquarters.citation details d, qual citi q,\
```

```
AND d.catry aum = q.catry aum AND d.proposl ar = 'T'",
"SHEEOT q.eatry num FRCM headquarters.citation_details d, qual_cit2 q,\
headquarters.citation_search s RHERE s.eatry_num = q.eatry_num\
 AND d.entry num = q.entry num AND d.proposl ar = 'T'");
int ourseroffest:
ist querybl()
queryh3 -- Create the subset of citations for the titles that
            portain to the MMAN area and also select the effect
             at lovel 3
Sifdef CHECKOUT
  printf("\nqueryb3 ");
SLOUT ("Euman Area") :
switch (off2srah[2]) {
  case 0: breek;
  case 1: quaryh31(); breek;
  case 2: quaryh32(); break;
  case 3: queryh33(); breek;
  case 4: quaryh34(); break;
#1fdef CHECKOUT
  default: sprintf(workspace.arr, "Invalid Euman Effect %d", eff2srch(2]);
         SLOUTS (workspace.arr);
Sendif
return (int) qual_entries;
int queryh31()
queryhil -- Create the subset of citations for the titles that
         partain to the MUMAN area and also Field Experiment
Bifdef CEBCROOT
 printf("\aqueryh31 ");
stroat (selerit, "Suman Fld");
cursoroffset = 0;
return (int) queryhix();
ist queryh32()
queryh32 -- Create the subset of citations for the titles that
           pertain to the HIMAN area and also Leb experiment
***********************
Bifdet CHRCHOOP
printf("\nqueryh32 ");
@endif
street (selerit, "Euman Lab") ;
Gursoroffset = 3;
return (ist) queryh3x();
int queryhii ()
```

headquarters.citation_search s WHERE s.catry_num = q.eatry_num

```
quaryhl3 -- Create the subset of citations for the titles that
              partain to the STREAM area and also Review Article
Difdef CHECKOUT
  printf("\nqueryh33 ");
Bondif
stroat (selerit, "Ruman Bev");
cursoroffset = 6;
roturn (int) queryhlm();
int queryh34()
queryhl4 -- Create the subset of citations for the titles that
              pertain to the HUMAN area and also Theoretical
Bifdef CEBCEDOT
  printf("\mquoryk34 ");
Dendis
stroat (selerit, "Eugen Theor") ;
cursoroffset = 3;
roturn (int) quaryhlx();
int queryblx()
queryhlz -- Actually do the search using hoursoroffset
*****************************
Sifest CERCEDUT
  printf(" quaryhlz %d+%d ", oursoroffset, temptabl);
stropy(sqlstmat.arr, bloursors[cursoroffset+temptabl]);
sqlstmat.len = strlen(sqlstmat.arr);
MERC SQL PREPARE D1 FROM : sqlstant;
if (sqlos.sqloods) {
  SLOUTP ("Prepare CED");
  SLOUTS ("4s", sqloa.sqlorms.sqlorms);
  azit (16);
EDEC SQL DECLARE CED CURSOR FOR D1;
BOOK SQL OFFER CRD;
if (sqlca.sqlcode) {
  SLOUTP ("Open CED");
  SLOUTP ("ts", sqlos.sqlerm.sqlermo);
qual entries = 0;
for (;;) {
  EXEC SQL FETCH CED into :enumb;
  if (sqlos.sqloods = SQL_BOF) break;
  if (sqlos.sqloods) {
    ENDOMES;
    SLOOTP ("Tetch CED");
    SLOUTS ("ts", sqloa.sqlerma.sqlerma);
  if (temptabl == 1) {
    EXEC SQL INSERT INFO QUAL_CIT2 (entry_num) VALUES (:enumb);
    3
  olse (
    HOME SQL IMSERT INTO QUAL CIT1 (entry num) VALUES (:commb);
```

```
if (sqloa.sqloods) {
        SLOUTP ("Insert after CED");
        SLOUTP ("4s", sqlos.sqlorms.sqlorms);
        exit (16);
    cual cotrios++:
   EXEC SOL COMMIT WORK;
    ENSWVALG();
EXEC SQL CLOSE CED;
temptabl = (temptabl + 2) + 1;
Bifdef CERCHOUT
  printf(" %d entries in table %d", qual_entries, temptabl);
Bendif
return (int) qual_entries;
quarypo.po -- Boutines for point of contact retrieval
      This file contains:
#include oproces.b>
                                      /* Beader for calls to MS-DOS
@include <stdio.b>
finalude <atype.b>
Sdefine SQLCA STORAGE CLASS extern /* Switch for header files
EXEC SQL BEGIN DECLARS SECTION:
ENEC SQL INCLUDE ditvers .h;
VARCEAR crit1[16];
VARCEAR crit2[46];
VARCHAR crit3[18];
VARCHAR orit4[10];
VARCEAR orit5[26];
EXEC SOL ESD DECLARS SECTION:
MORE DOL ESCHOOL SOLCA:
                                       /* Standard ASAW Honder File
static int poc_type;
EXEC SOL DECLARE POCT CURSOR FOR
                  SELECT first name, last name, title, office,
                         agncy dept, st add div, po box,
misc add, city base, state, misc add, city base, state, mipcode,
mail_code, phone, affiliation,
                         mej_attrib, min_attrib,
                         area, scope auth
                  FROM SUperuser.point of contact
WHERE UPPER(last name) LIRE :crit1
AND UPPER(min_attrib) LIRE :crit2
AND UPPER(maj_attrib) LIRE :crit3
                     AND UPPER (affiliation) LIKE : crit4
                     AND UPPER(state) = :crit5;
MEET SQL DECLARE POCZ CURSOR FOR
                  MELECT first name, last name, title, office,
                         agacy dept, st add div, po boz,
                         misc add, city base, state, zipoode,
                         mail code, phone, affiliation,
                         maj attrib, min attrib,
                         area, scope auth
                  FROM superuser point of contact
WHERE UPPER (last name) LIME :crit1
AMD UPPER (min attrib) LIME :crit2
                    AND UPPER (maj attrib) LIKE : crit3
                    AMD UPPER (affiliation) LIKE : crit4
                    AMD UPPER (city base) LIEE : crit5;
```

```
ist postoh()
      pastah -- Set up the search in the point of contact datab
 int 1, 5;
static char *affil[7] = ("CITY*",
                           "STATES",
                           "PEDERALA"
                           "MILITARYS".
                           "TRIBALA".
                           ***1:
fifdef CRECEDUT
printf("\mposroh ");
#endif
SLOUT("Point of contact search");
stropy(crit4.arr, affil[whichafl]);
crit4.len = strlen(crit4.arr);
j = strlen(contagn);
for (i = 0; i < j; i++) crit1.arr[i] = toupper(contamn[i]);
crit1.arr[j] = '\0';
stroat (crit1.arr, "+");
crit1.lea = strlea(crit1.arr);
j = strles(minoret);
for (i = 0; i < j; i++) arit2.arr[i] = toupper(minorat[i]);
arit2.arr[j] = '\0';</pre>
stroat (grit2.arr, "+");
crit2.lea = strlen(crit2.arr);
j = strlen (mejorat);
for (i = 0; i < j; i++) arit3.arr[i] = toupper(majorat[i]);
crit3.arr[j] = '\0';
strost(crit3.arr, "4");</pre>
crit3.les = strles(crit3.err);
j = strles (address);
for (i = 0; i < j; i++) crit5.arr[i] = toupper(address[i]);
crit5.arr[j] = '\0';</pre>
crit5.len = strlen(crit5.arr);
if (j = 2)
   poc_type = 1;
alse (
 pod_type = 2;
stroat(orit5.arr, "%");
  mrit5.lem++;
if (pod_type == 1) {
EXEC SQL OPEN POC1;
   if (sqlca.sqlcode) {
      SLOUIS ("Cursor POCL");
      emponeg();
      oxit (16);
      )
alse {
   MARC SQL OFFER POCE;
   if (sqloa.sqloods) {
      SLOTTP ("Cursor POC2");
      exposes ();
      exit (16) ;
12 (astpos()) {
  MEN SCREEN ("contactscreen");
   SLOOTS ("Sorry, but I cannot find anybody like that...");}
alse {
  MER_SCREEN("poodisplay");
```

```
int artnog()
     artpor -- Find next instance in the point of contact datab
 switch (pos type) (
    BEEC SQL FETCE POCI DETO :f name, :l name, :contitle, :office,
                             :ageacy dept, :st add div, :po box,
                             :misc add, :dity base, :state, :mipo
                             :mail code, :phone, :affiliatio,
                             :major_attrib, :mimor_attribute,
                             :area, :scope;
   if (sqloa.sqloods) {
      if (sqlos.sqloods - SQL BOF) (
         poc_type = 0;
mmc sqr cross soci;
         SLOUTS ("No more entries!");
         return (int) SQL BOF; }
       olso (
         SLOUTS ("Fetch POCL");
         empOmeg();
exit(16);
   EXEC SQL FETCE FOC2 INTO :f nems, :l nems, :contitle, :office,
                            :agency dept, :st add div, :po box, :misc add, :dity base, :state, :sipc
                             :mail_code, :phone, :affiliatio,
                             :major_attrib, :minor_attribute,
                             :ares, :scope;
   if (sqlos.sqloods) {
      if (sqloa.sqloods - SQL EOF) (
         poc type = 0;
mmc sqt close socz;
         SLOUTP ("No more entries!");
         return (int) SQL_BOF; }
      alse (
         SLOUTS ("Fetch POC2");
         exponeg();
         amit (16);
         )
   brook:
         SLOUTS ("There REALLY are no more entries!");
         return (int) 0;
f_nme.arr[f_nme.len] = '\0';
l name.arr[l name.len] = '\0';
contitle.arr[contitle.len] = '\0';
office.arr[office.len] = '\0';
agency dept.arr[agency_dept.len] = '\0';
st_add_div.arr[st_add_div.len] = '\0';
po_box.arr[po_box.len] = '\0';
misc_add.arr[misc_add.les] = '\0';
city bese.arr[city bese.lea] = '\0';
state.arr[state.les] = '\0';
zipoode.arr[zipoode.lem] = '\0';
mail_code.arr[mail_code.lea] = '\0';
phone.arr[phone.lea] = '\0';
affiliatio.arr[affiliatio.lem] = '\0';
major_attrib.arr[major_attrib.len] = '\0';
minor_attribute.arr[minor_attribute.len] = '\0';
area.arr[area.lea] = '\0';
scope.arr[scope.len] = '\0';
MERVALS () :
return (int) sqlos.sqloods;
int setaff(1)
```

```
artpor -- Find next instance in the point of contact database
4mt 4:
static *affects[] = ("CITY", "COUNTY", "STATE", "FEDERAL", "MILITARY",
                "TRIBAL", "HOME");
whichafl = 1;
stropy(affoolog, affools[1]);
HENVALS ():
querys1.pc -- Routines for citation database retrieval in the
               structures area using keyword set 1
    This file costains:
/* Bonder for calls to MS-DOS
#define SQLCA STORAGE CLASS extern
                            /* Switch for header files
EXEC SQL REGIS DECLARE SECTION;
MIRC SQL INCLUDE aitvare.h;
EXEC SOL EED DECLARE SECTION:
EXEC SOL DECLUDE SOLCA:
                            /* Standard ASAN Reeder File
int querys1()
Difdet CHECKOUT
 printf("\aquaryel ");
Bondif
SLOUTER ("Structures Area Unavailable");
return (int) qual_estries;
searches.po -- Routines that use the query routines to do searches
    This file contains:
    heroh001 - Search based on estries on first Euman area screen
    asrch001 - Search based on entries on first Animal area screen
    sarch001 - Search based on entries on first Structures area screen
    merch001 - Search based on entries on first Modeling area screen
    shwartcit - Display the next citation on the screen
    loadacit - Load the next citation from the database FOR DISPLAY
finalude oprocess.h>
finalude oprocess.h>
                           /* Reader for calls to MS-DOS */
#define SQLCA STORAGE CLASS extern
                           /* Switch for header files
EDDC SOL REGIE DECLARE SECTION:
                           /* All SQL declarations are in */
EXEC SQL INCLODE ditvars.h;
DEEC SQL END DECLARE SECTION;
EXEC SQL INCLUDE SQLCA;
#include "asan.h"
                           /* Standard ASAN Honder File
/*********************
                       SQL Cursors
```

```
MANG SQL DECLARE GDOO GURSOR FOR
          SELECT authornum FROM headquarters.author citation link
          WHERE entry her = :comb;
 EREC SQL DECLARE CD10 CURSOR FOR
         SELECT q.entry_num, s.suitability, t.title, s.date_pab
FROM headquarters.citation_titles t,
                headquarters . citation_search s,
         qual cit1 q

minute t.eatry aum = q.eatry aum

Aum s.eatry aum = q.eatry aum;
 MINE SOL DECLARE CD20 CURSOR FOR
         FROM headquarters distribution titles t,
                beadquarters ditation search s,
         qual cit2 q
           AND s.eatry num = q.eatry num;
 Screen "Memory"
 ************************
 int herehood()
 WHEREAMI (Screen, Window, Datum, Button);
 stropy(oldscreen, Screen);
selerit[0] = '\0';
 int asrahooo()
 REFRENCI (Screen, Window, Datum, Button);
 stropy (oldscreen, Screen);
 selerit[0] = '\0';
 int esrchooo ()
 REFERENCI (Screen, Window, Datum, Button);
 stropy (oldscreen, Screen);
selerit[0] = '\0';
int merchooo ()
REFERENCE (Screen, Window, Datum, Button);
stropy (oldscreen, Screen);
selerit[0] = '\0';
int herch001()
herch001 - Search based on entries on first Suman area surve
*****************************
Bifdef CENCROTT
printf("\nherch001 ");
hereh000();
if (quaryw()) {
munvals();
  if (quaryt()) {
MERVALE();
     if (quaryd()) (
menvals();
        queryh ();
     )
  )
MENVALS ();
if (iqual entries) (
  SLOUTER ("No entries matching these criteria were found");
  return (int) 0;}
alsa {
  if (|malisto()) {
   if (|shwartait()) {
```

```
HEW_SCHEEN("citdepl");
ADD_WINDOW("citdispection", 19, 1);)
      roturn (int) 0;}
  int herehooz ()
         heroh002 - s
  diffet CERCEDOT
  printf("\nhereh002 ");
  Sendif
  if (queryw()) {
     MENVALS ();
     if (queryt()) {
        MENVALS ();
        if (queryd()) (
            MENVALS () ;
            1f (queryb1()) (
               if (quaryh2()) (
                   queryhi ();
 MENVALE ();
 if (iqual entries) (
     SLOCTED ("Bo entries matching these criteria were found");
     return (int) 0;}
 alse (
    if (|molisto()) {
        if (!shwartait()) {
    HEM_SCREEN("aitispl");
           ADD WINDOW ("citdispection", 19, 1);}
    return (int) 0;}
 int asrch001()
        asrch001 - Search based on entries on first Animal ar
#ifdef CEECHOUT
printf("\nasrch001 ");
bendif
if (queryw()) (
menvals();
    if (quaryt()) {
       HENVALS ();
      if (queryd()) {
mmwwkis();
          destas () :
      )
HENVALS ();
if (iquel_entries) {
    sicorny("No entries matching these criteria were found");
   return (int) 0;}
alse (
  if (|molisto()) (
     if (!shwartoit()) {
    Hew_screen("citdspl");
         ADD_WINDOW("ditdispaction", 19, 1);}
  roturn (int) 0;}
```

```
int sarch001()
        sarch001 - Search based on entries on first Structure
  *************************************
  diffet CEECEOUR
  printf("\n esrch001 ");
  Bendis
 1f (queryw()) {
    MEMVALO();
    if (quoryt()) {
MEWVALS();
       if (queryd()) {
HENVALS();
          deerla () :
    )
 EMERVALS ();
 if ([qual_estries) (
    SLOUTED ("No entried :
                         stching these criteria were found");
    roturn (int) 0;}
 alse {
   if (!malisto()) (
   if (!shwmxtait()) {
         MEN_SCREEN ("aitdepl");
         ADD_WINDOW("citdispaction", 19, 1);}
   roturn (int) 0;}
 int march001()
        erch001 - Search based on entries on first Modeling
printf("\merch001 ");
 Bendie
if (queryw()) {
   if (queryt()) {
HENVALS();
      1f (queryd()) {
MEWVALS();
         destas();
HEWVALS ();
return (int) 0;}
also (
   if (|malisto()) {
     ADD WINDOW ("citdispaction", 19, 1);}
  return (int) 0;}
int melisto()
     melisto - Open the cursor for main citation display scre
```

```
#ifdef CERCEDUT
      printf("\mmalisto ");
   current = 0;
   switch (temptabl) (
      Gase 1:
         MINE SOL OPEN CO10;
         1f (sqlue.sqloods) {
sLOOTS ("Cursor CD10");
           emponing ();
           exit (16);}
        breek:
      00.00 2:
        EXEC SQL CPES CD20;
        if (sqlos.sqloods) (
           SLOOTS ("Cursor CD20");
           ampang ();
           exit (16);}
        brook:
     default.
        bad_temp(temptabl);
  roturn (int) sqlom.sqloode;
  int malista()
        meliste - Close the cursor for main citation display screen
  #1fdef CHECKOUT
    printf("\malista ");
  Bondie
  switch (temptabl) (
    0000 1:
       THE SQL CLOSE CO10;
       if (sqlos.sqloods) (
sLoors("Cursor CD10");
          emponeg();
          exit (16) ; }
      break;
    case 2:
       ENTER SQL CLOSE CD20;
       if (sqlos.sqloods) (
         SLOOTS ("Cursor CD20");
         emponeg();
         exit (16);}
    default:
      bed_temp(temptabl);
return (int) sqlon.sqloode;
int shunstoit()
shwartait - Show mert citation
int select;
difdef CEECHOUT
  printf("\nshwmatcit ");
Bendie
if (select = loadmoit()) {
```

```
switch (select) (
        case SQL BOT:
        Case SQL FETCE OF OF CHORR:
           SLOUTES ("You are at the end of the list");
           REMOVE WINDOW();
           break;
        dofault:
           emit (16);
  also {
     MERVALS ();
  return (int) sqlom.sqloods;
       loadnoit - Load the citation detail display with the next citation
 int 1, j, k, a;
 Bifdef CHICKOTT
    printf("\mloadmoit ");
 SLOOT ("Retrieving Display Text");
if (temptabl == 1) {
    EMBC SQL FETCE CD10 IMPO :enumb, :suitable, :workspace, :datep;
    if (sqloa.sqloods) return (int) sqloa.sqloods;
 else (
   EXEC SQL FETCE CD20 INTO : caush, :suitable, :workspace, :datep;
    if (sqlos.sqloods) return (int) sqlos.sqloods;
   1
    ab.arr[enumb.lem] = '\0';
suitable.err[1] = '\0';
 workspace.arr[workspace.lea] = '\0';
datep.arr[datep.len] = '\0';
details_road = 0;
j = (int) (((float) workspace.len) / ((float) 60)) + 1; 
 <math>j = j > 4 ? 4 : j;
k = 0;
for ( 1 = 0; 1 < j; 1++) (
   s = k + 60 > workspace.lem ? workspace.lem - k : 60;
strmcpy(entdeec[i].arr, &workspace.arr[60*1], n);
   estdess[1].len = n;
   catdosc[i].arr[n] m '\0';
   k += n:
20r ( ; i < 4;i++) emtdess[i].err[0] = '\0';</pre>
HATEC SQL OFFER CDOO;
if (sqlos.sqloods) (
  SLOUZE ("Cursor CD00");
   exposes ();}
k = 0:
for (;;) {
  v40point = &sutborlist[k];
   authorlist[k] .len = 40;
/* for (i= 0; i < 40; i++) authorlist[k].arr[i] = ' '; */
  EXEC SQL FETCE CD00 INTO :authoraua;
  if (sqlos.sqloods) break;
  EXEC SQL SELECT author FROM headquarters author list
       DFTO : v40point WHERE authornum = :authornum;
  if (sqloa.sqloode) {
     SLOUTS ("Author selection . . . ");
     exposes ();
```

```
emit (16);}
     authorlist[k].arr[authorlist[k].lea] = '\0';
     2++;
  if (sqlma.sqlmode (= SQL_NOF) {
  if (sqlma.sqlmode) {
        SLOUIS ("Cursor CD00");
        emponeg();
        exit (16);}
    else SLOUTE ("Best citation: more authors than screen shows");
  MICEC SOL CLOSE COOO:
 for (i = k; i < 10; i++) ( /* NOLL for those not filled this time */
swthorlist[i].arr[0] = '\0';
swthorlist[i].les = 0;)

if (b > A) /* Thresents if we have now then E f/
  12 (k > 4)
                            /* Truncate if we have more than 5 4/
    for (1 = 0; 1 < k; 1++) {
       authorlist[k] .len = 1 > 20 7 30 : 1;
       authorlist[k].arr[authorlist[k].len] = '\0';}
  return (int) 0;
 int research ()
  research - Rescope the search. If no citations, clear the tables.
  if (iqual entries) quetup();
 MEW SCREEN (oldscreen);
 int hereh010()
 printf("\nherah010 ");
 Beadif
hereh000();
if ([qual_entries) {aff2srch[0] = aff2srch[1] = aff2srch[2] = 0;}
HEW_SCREEN ("hkeyerch");
)
int herch011()
heroh011 - Euman Effect Descriptor Type Varification
**************************
#1fdef CHRCHOUT
printf("\nherch011 ");
Sendif
for(;;) {
  if (descrippe.arr[0] = 'A')
if (descrippe.arr[0] = 'F')
                                              {aff2srah[0] = 1; break;}
  if (desctype.arr[1] = 's')
else if (desctype.arr[1] = 'E')
if (desctype.arr[0] = 's')
if (desctype.arr[1] = 'L')
      1.5
                                              {eff2srch[0] = 2; breek;}
{eff2srch[0] = 3; breek;}
                                              {aff2srch[0] = 4; break;}
      alse if (desctype.arr[1] - 'P')
                                              {eff2srch[0] = 5; break;}
```

```
if (desctype.arr[0] = 'T')
                                                        {eff2srch[0] = 6; breek;}
     if ((eff2srch[0]) || (decetype.arr[0] == ' ')) {eff2srch[0] = 0; break;}
     MOUTS ("Not a valid effect");
     UPDATE DATOM("doestype");
  ADD_WIEDOW("noistype", 7, 24);
MENT_DATOM("noistype");
  int heroh012()
  /**********************
        herak012 - Noise Descriptor Type Varification
  *****************************
  #1fdef CHICKNOT
  printf("\nhoroh012 ");
  Sendif
  for(;;) {
    if (desctype.arr[0] == 'A')
    if (desctype.arr[0] = 'A')
if (desctype.arr[0] = 'B')
if (desctype.arr[1] = 'B')
if (desctype.arr[1] = 'O')
if (desctype.arr[1] = 'O')
if (desctype.arr[1] = 'B')
if (desctype.arr[1] = 'B')
                                                       {off2orch[1] = 1; break;}
                                                       (off2srch[1] = 2; brook;)
                                                      {off2srch[1] = 3; break;}
{off2srch[1] = 4; break;}
                                                      {off2srch[1] = 5; break;}
        else if (desctype.arr[1] - 'R')
                                                      {off2srch[1] = 6; breck;}
    if (descripe.arr[0] = 'R')
                                                      {aff2srch[1] = 7; breck;}
                                                      (aff2srah[1] = 8; break;)
    if ((eff2erch[0]) || (desctype.arr[0] == '')) {eff2erch[1] = 0; break;}
smcorm("Not a valid noise type");
    UPDATE DATEM("soistype");
    1
 REMOVE_WIRDOW();
ADD_WIRDOW("exprtype", 7, 24);
 HERT DATOM ("ampdose");
 herah013 - Experimental Type Varification
*************************************
Difdef CHRCHOTT
printf("\mbsrch013 ");
Condis
for(;;) {
  if (desctype.arr[0] = 'F')
if (desctype.arr[0] = 'L')
                                                     {eff2srch[2] = 1; break;}
                                                     {aff2srah[2] = 2; break;}
   if (descripe.arr[0] = 'R')
if (descripe.arr[0] = 'T')
                                                     {aff2srch[2] = 3; break;}
                                                     {aff2srah[2] = 4; break;}
   if ((eff2srch[0]) || (desctype.arr[0] = '')) {eff2srch[2] = 0; breek;}
shoors("Not valid type");
   UPDATE DATUM("exprtype");
REMOVE WINDOW();
int serch010()
      serch010 - Setup for entries on Structures keyword screen
```

```
printf("\neereh010 ");
   esrob000();
   if ([qual_entries) {aff2srch[0] = aff2srch[1] = aff2srch[2] = 0;}
  MEN_SCREEN ("skoysrah");
  int merch010()
  march010 - Setup for extrins on Modeling keyword scre
  ***********************************
  Bifdef CHECKOUT
  printf("\mmsrch010 ");
@codif
  merch000();
  if ([qual_entries) {eff2srch[0] = eff2srch[1] = eff2srch[2] = 0;}
  MEN SCHEEN ("nkeysrch");
 int escabolo()
  asrch010 - Setup for entries on Animal keyword scree
 ***********************
 #1fdef CHECKOUT
 printf("\nesrch010 ");
 Sendir
 asrah000();
 speciael.arr[0] = '\0'; speciael.len = 0; mmwals();
 MER_SCREEN ("akeyerch");
 textdisplac -- Routines that display text fields from "MENO_FILE"
    This file contains:
finalude oproc
                              /* Reader for calls to MS-DOS
disclade cetdio.b>
#define SQLCA STORAGE CLASS extern
                              /* Switch for header files
                                                          8/
EXEC SQL REGIS DECLARE SECTION;
                               /* All SQL declarations are in
EXEC SQL DECLODE citypes.h:
MORE SOL MED DECLARE SECTION;
EXEC SQL INCLUDE SQLCA;
finalsdo "ssan.h"
                              /* Standard ASAW Header File
int deplahet ()
```

```
deplahet -- Display abstract
   difdef CHECKOT
    printf("\n deplahet ");
  Bender
  if (!details_road) get_details();
  if (abstract.lem) {
   stracpy(nartnesso.arr, abstract.arr, 10);
     getzene ();
     HER SCREEN("shownhe");
ADD_WINDOW("shwantabe", 21, 1);}
  olso {
    SLOOP ("No abstract available");
    }
  int deplorit ()
  doplarit -- Display critique
  difdef CHECKOTT
   printf("\n deplorit ");
 if (!details_read) get_details();
 switch (critdisp) (
      if (critiquel.lea = 10) {
stracpy(nextsomo.arr,critiquel.arr, 10);
         getmemo();
HEN SCREEM("showabs");
ADD_WINDOW("shwartrew", 21, 1);
         MENVALE ();
         critdisp = 1;
         return (int) critdisp; )
 085e 1:
      if (critique2.len == 10) {
    strncpy(nextmemo.arr, critique2.arr, 10);
         getneso ();
         HEN SCREEN ("shousbe");
         ADD WINDOW ("shwartrey", 21, 1);
         HENVALS ();
         critdisp = 2;
return (int) critdisp; }
0000 2:
      if (critique).les == 10) {
         strncpy (nextmemo.arr, critique3.arr, 10);
         getmeno ();
        MEN SCREEN("shomabs");
ADD_WINDON("shumatrev", 21, 1);
        MENVALS ();
        critdisp = 3;
        return (int) critdisp; }
default:
    MLOOTS ("There are no more critical reviews");
    critdisp = 0;
ADD_WINDOW("shwnrtabe", 21, 1);
    return (int) critdisp;
```

```
getacae -- Retrive a memofield from the database
   FILE *fopes(), *mmo;
   int fwrite();
   difdef CERCEOUT
    printf(" getmeno ");
   Bonds &
  northeno.len = 10;
  HERC SQL SHLECT nono_taxt FROM headquarters.nono_file 1870 :higdisplay
                      MERRE block number - :nextmemo;
  if (sqlos.sqloods) {
    SLOUTS ("Cannot find memo block");
     SLOUTS (sqlca.sqlarms.sqlarms);
    return (int) 0;}
  if ((memo = fopen("triblk\\nemotrt.trit", "w")) == EULL) (
SLOUTEP("Error creating memofield textblock");
    return (int) 0;}
  fwrite(bigdisplay.arr, bigdisplay.lem, 1, memo);
fprintf(memo, "\n\n");
fclose(memo);
  return (int) 0;
  ì
 int get_details()
 get_details -- get the pointers to the detailed memo fields
 diffet CERCEDOR
   printf(" gotdetails ");
   die
 EXEC SQL SELECT RESTRACT, CRITIQUE R1, CRITIQUE R2, CRITIQUE R3
         FROM headquarters ditation details WHERE entry num = :enumb
DETO :abstract, :critiquel, :critiquel; :critiquel;
 if (sqlos.sqloods) {
   SLOUTS ("Cannot find details");
   Expossed.
   SLOUTS (sqlos. sqlorm. sqlorme);
   roturn (int) 0;}
 difdef CHECKOUT
   printf(" Abs td, Crit td, td, td", abstract.len, critiquel.len,
           critique2.len, critique3.len);
critdiep = 0;
details read = 1;
... - ma* - All user information for a perticular MTR
 ************************
#define SQLCA STORAGE CLASS extern /* Switch for header files
```

```
MINE SOL MICLION SOLCA;
   BIEC SQL BEGIN DECLARS SECTION:
                                     /* All sqt declarations are in */
   EXEC SQL INCLUDE hostwars.h:
                                     /* those header files
  BIRC SQL INCLODE faharris.h;
  MINE SQL MED DECLARE SECTION;
  dinglude "agen.h"
                                     /* Standard ASAN Seeder File
  int melisto()
  melisto --- Open cursor 52 for a list of user information
                       of navigation points on a particular MTR
       Boutine executes an open cursor command for cursor $2 and then
       returns to the calling progress with the CRACLE status code.
       Note: Modifications to this function may impact the related
               functions mtlistf() and mtlistc() that fotch rows and
               close the cursor and, possibly, functions that call
              these utility routines.
  Diffet CENCEDUT
  printf("\mmalisto ");
  Sendif
  stropy( aid.arr, sraid.arr);
     at (aid.arr, "%");
  cid.len = strlen(cid.arr);
 EXEC SQL DECLARE S2 CURSOR FOR
         fix label, floor ref, ceiling ref, fix id, fix type, arton, fix lat, fix lon, fix red, fix dist, floor, ceiling, width left, width right
                 Et reomente
                  fix label LINE : cid
          OFFER BY fix label;
 MING SQL COM S2;
 difdef CHECKOTZ
 printf(" Open: %ld ", sqlom.sqloods);
 gendif.
 return (int) sqlos.sqloods;
 int malistf()
 malistf --- Fetch a row using the opened cursor 82 for MTR
                     Mavigation Point User Information
      Routine executes an fetch command for cursor $2, which is assumed
     to have been opened, and then returns to the calling progress with
     the ORACLE status gode.
     Note: Modifications to this function may impact the related
             functions stlisto() and stlisto() that open and close the
             cursor and, likely, functions that call these utilities
*****************************
stropy(optr3, "
                         "); /* If you don't use VARCHAR, you have to */
"); /* clear the space or maind things happen */
stropy (optr4, "
RIBC SQL FERCE S2 INTO : n2bv,
                                 :optr1,
                                             : aptr2,
                                                         : curfixid.
                                            optr3,
                     : curfixtyp, : curartoc,
                                                         :optr4,
                     : curfired, : curfirdist, : lptrl,
                                                         : lptr2,
                     :curwidleft, :curwidright;
profixed.arr[profixed.les] = '\0';
```

```
prefixtyp.arr[prefixtyp.lea] = '\0';
  Bifdef CHECKOUT
  printf(" Fetch: %ld ", eqlos.eqloods);
  Bendie
  return (ist) sqlos.sqloode;
  int malisto()
  malista --- Close oursor S2 for Navigation Points
      Boutine executes a close cursor command for cursor $2 and then
      returns to the calling program with the CRACIE status code,
      Note: Modifications to this function may impact the related
             functions mtlisto() and mtlistf() that open the cursor
             and fetch rows using it and, possibly, functions that
            call these stilities
 ******************************
 Difdet CHRONOTT
 printf("\matlistc ");
 Beadlf
 MORE SQL CLOSE 82;
 #1fdef CERCEOUT
 printf("Close: tld ", sqloa.sqloode);
 roturn (int) sqlom.sqloods;
 ASSET REPORT GENERATOR MODULE
 10
                                                                   */
 14
                       January 26, 1907
                                                                   */
 #include  process.h>
#include <stdio.h>
                                  /* Beader for calls to MS-DOS
                                  /* Switch for beader files
 Modine SQLCA STORAGE CLASS extern
REEC SQL BEGIN DECLARS SECTION;
                                  /* All SQL declarations are in */
EXEC SQL INCLUDE hostwars.h:
                                  /* these beader files
EXEC SQL INCLUDE fabarris.h;
VARCEAR comparemis[8];
VARCEAR comparemir[26];
                                  /* Last mission used */
                                  /* Last MTR used */
VARCHAR comperesc[12];
                                  /* Lost sircraft used */
double emptab [27]:
                                  /* Space for "ROUTE.BAS" Table */
int day_ops[12], might_ops[12];
RECE SQL MED DECLARS SECTION;
NING SQL INCLUDE SQLCA;
Sinclude "seen.h"
                                 /* Standard ASAN Seader File
EXEC SQL DECLARE LIMBAL CURSOR FOR
                     SELECT s label, m ident, mircraft, activity
                      FROM activities
                   ORDER BY a label, aircraft, m ident;
MUSIC SQL DECLARS LINDA2 CURSOR FOR
                    SELECT day, might FROM operations
                     WHERE activity - : activity
                   ORDER BY month ASC;
EXEC SQL DECLARE LINDAS CORSOR FOR
                    SELECT s label, m ident, siroraft, activity
                      FROM activities
                   ORDER BY s label, m ident, mircraft;
```

....

```
char
  int
           rtn_wale{10][2], rtn_wale{10][2], total;
annoy flag = -2, hearing flag = -2;
sleep flag = -2, livestock flag = -2, math[20];
  int
  int
  int
  int
           speech flag = -2, glass flag = -2;
          compare flag = -2, species flag = -2, index;
ldmarl, ldmar2, ldmar3, ldmar4, ldmar5, ldmar[20][5];
  100
  double
 double log1, leg2, leg3, aleval[20][5];
 report (name)
 cher acce[];
    PILE
             *fopen(), *zpt;
     int
    int 1;
stropy(altlev," ");
spt = fopes(name, "w");
if (spt == NULL) {
    printf("\nmed filenume %s", name);
        exit (16) ; }
    table1 (rpt) ;
    tbl2 (rpt);
    table3 (rpt);
    BOOK SQL OFFER LIMINAL;
    if (sqlom.sqloods) {
   printf("Open 3: %s", sqlom.sqlerrm.sqlerrmo);
        exit (4); }
    for (1=0;;1++) (
        mine sqt FEFCE LIMBAS INFO :sraid, :misslabl, :ac name, :notivity;
        if (sqlos.sqloods - sql nor) break;
        if (sqlos.sqloods) (
           printf("Fetch 3: %s", sqlca.sqlerms.sqlermsc);
           exit(4); }
        sraid.arr[sraid.les] = '\0';
       misslabl.arr(misslabl.les) = '\0';
ac_nesse.arr[ac_nesse.les] = '\0';
       fillrtavals (i);
        landuse (rpt, 1);
        inconsequential (rpt, i);
       minor (rpt, 1, 1);
        considerable (rpt, 1, 1);
       notconsidered (rpt, 1);
    MOSC SQL CLOSE LINEDAL:
    references (rpt) ;
   folose (spt);
report3 (neme, which)
char neme[];
int which;
   FILE *fopen(), *xpt;
            1;
   stropy(altley, " ");
   xpt = fopen(neme, "w");
if (xpt == NULL) (
      printf("\nBod filenome to", nome);
      exit (16);}
   HIME SQL OPEN LINDAY;
   if (sqlca.sqlcode) {
      printf("Open 3: %s", sqlos.sqlorms.sqlorms);
       arit (4); }
   for (1=0;;1++) (
      HIRC SQL FETCH LIEDAN INTO :sreid, :misslabl, :ad asso, :activity;
      if (eqlca.sqloods = SQL ROF) break;
if (eqlca.sqloods) {
   printf("Fetch 3: ts", sqlca.sqlorma.sqlerma);
          exit (4); }
      sraid.arr[sraid.len] = '\0';
      misslabl.arr[misslabl.lea] = '\0';
      ed_name.arr[ad_name.len] = '\0';
      fillrtavals (1);
      landuse (rpt, i);
      inconsequential (rpt, i);
```

```
minor (rpt, i, which);
           considerable (rpt, 1, which);
           notocomidered (rpt, 1);
      MINEC SQL CLOSE LINEAL:
       references (rpt) ;
       falose (xpt);
   table1(zpt)
   FILE *zpt;
      optr3 = show.lat;
      optr4 = show.lon;
      comparentr.arr[0] = '\0';
      EXEC POL OPEN LINDAL;
      if (sqlca.sqlcode) {
          printf("Cursor 1: 4s", sqlca.sqlorm.sqlorma);
          omit (4);
      fpriatf(rpt, "DESCRIPTION OF PROPOSED ACTION(a\a");
      fprintf(rpt, "the proposed action, known as *s,\n",Assrsmont.neme);
fprintf(rpt, "(*s)\n",Assrsmont.desc);
fprintf(rpt, "consists of the use of the MTR segments as described in Table \
  fprintf(xpt, "The subsonic flight operations proposed for these MFR segments\n");
fprintf(xpt, "are described in Table 2.\n\n");
      for (::) 4
         MING SQL FETCH LIMBAL INTO : sraid, :misslabl, :ad name, :activity;
          if (sqlca.sqlcode - sqL BOF) break;
         if (sqloa.sqloode) (
             printf("Fetch 1: 4s", sqloa.sqlarms.sqlarmsc);
             exit(4); }
         if (!strncmp(comparentr.arr, srcid.arr, srcid.len)) continue;
strncpy(comparentr.arr, srcid.arr, srcid.len);
srcid.arr[srcid.len] = '\0';
         misslabl.arr[misslabl.len] = '\0';
ac name.arr[sc name.len] = '\0';
   fprintf(rpt, "Table 1: Description of MTR 4s\n", sraid.arr);
   fprintf(rpt, " MAV \n");
fprintf(rpt, " FOURT FIX RAD/DIS
                                                            LATITUDE
                                                                                   LONGITUDE(n");
   fprintf(rpt, ----
                                                                                         ·---\a-);
         if (malisto()) {
            exponeg();
            axit (4);
     3
        while ( !malistf() ) (
            (int 1, j;
            for (imercid.len, j=0; i < n2bv.len; i++, j++)
            curnavpt.arr[j] = a2bv.arr[1];
curnavpt.arr[j] = '\0';}
            curfixed.arr[curfixed.len] = '\0';
        show.lat[3] = ' ';
        show.lon[3] = ' ';
fprintf(rpt, " 4s
                                     ts 103d/103d
                                                                          40\z",
                                                                 40
        curnavpt.arr, curfixed.arr, curfixed, curfixed, show.lat, show.lon);
    fpristf(rpt, "\n\n\n");
    if (sqlca.sqlcode != SQL_BOF) printf("\nes", sqlca.sqlcrm.sqlcrmc);
    melista();
EXEC SQL CLOSE LIBERAL;
tbl2(rpt)
FILE *rpt;
   int i;
```

```
comperentr.arrf01 = '\0':
      comparens .arr[0] = '\0';
      EDITIC SQL OPER LIMINAL;
      if (agles.sqloods) {
         printf("Cursor 1: 4s", sqlcs.sqlcrm.sqlcrmc);
         emit (4);}
     for (::) (
        EXEC SQL FETCH LIMBAL INTO :sraid, :misslabl, :ad name, :activity;
         if (sqlca.sqlcods = SQL BOF) break;
        if (sqlox.sqloods) {
   printf("Fetch 1: 4s", sqlox.sqlorms.sqlorms);
            axit (4); }
        if (stracep(comparentr.arr, sraid.arr, sraid.lea)) {
           sraid.arr[sraid.len] = '\0';
           stracpy(occeperentr.arr, sraid.arr, sraid.len);
        if (stracep(comperenc.arr, ac_name.arr, (masigned int)12)) {
           ac_nmae.arr[ac_nmae.len] = '\0';
           stracpy(comparence.arr, ac meme.arr, (unsigned int) 12);
           MING SQL SELECT power_units FROM mirseltab
                           Mero :pr pwr u wakes aircraft = :ac asso;
           if (sqlos.sqloods) (
              printf("Power units %s", sqlos.sqlerms.sqlerms);
              azit (4) ; }
           pr_per_s.arr[pr_per_s.les] = '\0';
        misslabl.arr[misslabl.len] = '\0';
        EDEC SQL SELECT SORTIO_SIZE FROM missions INTO :ac in form
                                   MERE mission = :misslabl;
       if (sqlos.sqloods) {
          printf("Sortie size ts", sqlon.sqlorms.sqlorms);
           oxit (4);}
       mind sqn smacr alt, alt_ref, per, spd
                       FROM str flight pers
                        1970 :althoval, :althew, :ac power, :ac speed
                       WHERE activity = :activity
                        AMD soq = 1;
       if (sqlos.sqloods) (
          printf("Flight permeters ts", sqlom.sqlerms.sqlerms);
          if (sqlos.sqloods - SQL EOF) ( /* For obsoking only ! */
              altlevel = 300;
              stropy(altiev, "? *");
              ac_power = 100.0
ac_speed = 450;
                     r = 100.00;
          alse exit(4);
       fprintf(rpt, "\n\n\nTable 2: Description of Flight Operations on %s \
 by Month", sroid.arr);
       fprintf(rpt, "\n\n\mission ts (td AIRCRAFT/FORGATION)\n\n",
                  misslabl.arr, ac in form);
       fprintf(rpt, "AIRCRAFT: 4s
                                                    PORER: 47.21f 40\n",
      ad name arr, ac power, pr per u.arr);
fprintf(rpt, "Alvirous: $6d %s
                                                    SPEED: 47.21f kts\n\n",
                 altieval, altiev, as speed);
      fprintf(rpt,"
                                               OPERATIONS \n");
       fprintf(rpt, "MONTE
                                      DAY
                                                              HIGHT\n" :
      fprintf(rpt, -----
                                                             ("#/-----
      RIEC SQL OFFER LINDAZ;
      if (sqlom.sqloode) {
   printf("Cursor 2: %s", sqlom.sqlormm.sqlermmo);
         orat (4); }
      EXEC SQL FETCE LIEDA2 INTO :day_ops, :night_ops;
      for (1=0; 1 < 12; 1++) {
        fprintf(rpt, " to
                                         444
                                                                44d\z",
                month[i], day_ops[i], might_ops[i]);}
      ENG SOL CLOSE LINDAS;
   EXEC SQL CLOSE LINDAL;
tables (zpt)
```

```
FILE *spt;
        1, 3;
double temp1, temp2, add, log10();
fprintf(rpt, "\fsteedary of PREDICTED HOISE EXPOSURE\a\a");
fprintf(rpt, "Noise exposure produced by miroraft operations may be \
specified in a variety\n*);
fprintf(rpt, "of waits. The noise of low altitude high speed flights on \
Military Training\n*);
fprintf(rpt, "Routes is specified for current purposes by a cumulative moise \
metric called\n"1:
fprintf(rpt, "the onset rate adjusted monthly day-night avarage, A-weighted \
sound level, \a");
fprintf(rpt, "abbreviated Ldmar. As described by Flotkin et al. (1987), \
this metric is\n");
fprintf(rpt, "based on an integration period equal to the calendar meath \
with the highest\n");
fprintf(rpt, "aumber of operations.\z\z\z");
occuparentr.arr[0] = '\0';
EDEC SOL OFER LINDAS:
if (sqlos.sqloods) {
   printf("Cursor 3: 4s", sqlos.sqlerms.sqlerms);
   exit (4);
fprintf(rpt, "Table 3: Summary of Maximum Hoise Exposure Produced by Flight \
Operations \n\n\n");
fprintf(rpt, " MTR Missio
fprintf(rpt, "-----
                       Mission Aircraft Month Distance
                                                                              Linar\n\n*);
("m/);
for (j=0;;j++) {
    EXBC SQL FERCE LINDAN INTO :sroid, :misslabl, :mo_memma, :motivity;
   if (sqlos.sqloods - SQL_BOF) break; if (sqlos.sqloods) (
      printf("Fetch 3: %s", sqlon.sqlorms.sqlorms);
       orit(4); }
   sraid.arr[sraid.len] = '\0';
   if (strncmp(comparentr.arr, srcid.arr, srcid.len)) {
   strncmpy(comparentr.arr, srcid.arr, srcid.len);
   fprintf(rpt, "\a+-9s", srcid.arr);
       comparents.arr[0] = '\0'; /* insure that these fail for new a/c */
       ocmperess.arr[0] = '\0';
   else fprintf(rpt, "\n
   missiabl.orr[missiabl.les] = '\0';
  if (stracep(comparents.arr, misslabl.arr, misslabl.len)) {
   stracep(comparents.arr, misslabl.arr, misslabl.len);
   comparents.arr[comparents.len] = '\0';
   comparend.arr[0] = '\0';
      HEEC SQL SELECT sortie size FROM missions 1870 :ec_in_form
                                     REERE mission = :misslabl:
      if (sqloa.sqloods) {
         printf("Sortie size 4s", sqlcs.sqlerm.sqlerms);
          oxit (4);}
      fprintf(rpt, "4-9s", misslabl.arr);
  else fpristf(rpt, "
  so_neme.srr(sc_neme.les) = '\0';
  if (stracep(comperedc.arr, ac name.arr, ac name.lea)) {
     stracpy(compared arr, ac name.arr, ac name.len);
compared arr[ac name.lea] = '\0';
fprintf(rpt, " %-9s", ac name.arr);)
se fprintf(rpt, "\n");
  else fprintf(rpt, "\n
  EXEC SOL COME LINEAR?
  if (sqlos.sqloods) (
     printf("Cursor 2: activity %d/a %s", activity, sqlca.sqlarms.sqlarmsc);
      exit (4); }
  EXEC SQL FETCE LINDA2 ISTO :day_ops, :might_ops;
  if (sqlos.sqloods) (
     printf("Fetab 2: %s", sqlcs.sqlcrm.sqlcrmc);
      exit (4); }
```

```
MING SQL CLOSE LINDA2;
  add = 0;
  index = 0;
temp2 = 300.0;
  for (i=0; i < 12; i++) {
     temp1 = (double) (day ope[i] + 10 * night_ope[i]);
if (temp1 > add) {
        if (temp1 < temp2) temp2 = temp1 ;
         add = temp1;
        index = 1;
  if ((add-temp2) < 0.05) index = 12;
  math[j] = index;
  EXEC SQL SELECT SOTTIO SITE
                   FROM BLESLOGE
                  Dero : ac in form
  if (sqloe.sqloods) {
     printf("Sortie size to", sqlos.sqlorm.sqlorms);
     omit(4);}
  if (add > 0) add = 10.0 * log10(add * (double) ac_in_form) - 64.1;
  also add = -1000.00;
    /* This is a bit sloppy we should subtract 10 LOGIO of
        the number of seconds in the month instead of 64.1, but .... s/
  sprintf(workspace.arr, "SELECT ACT+04d FROM mir_emp_tab", sotivity);
  workspace.len = strlen(workspace.arr);
  BUIC SQL PREPARE STAT FROM : Workspace;
  if (sqloa.sqloods) {
    printf("Frepare: %s", sqlos.sqlorms.sqlorms);
     axit (16);}
 EXEC SQL DECLARE D CORS CORSOR FOR STREET
 MADE SQL OPEN D CURE;
 if (eqlca.eqlcode) {
    printf("Dyn Open: %s", sqlom.sqlorms.sqlorms);
     exit (16) ; )
 EXEC SQL FETCE D_CURS ISTO :emptab;
 if (sqlos.sqloods) {
    printf("Exposure table: 4s", sqlos.sqlerm.sqlerme);
    if ((sqlos.sqloods = SQL NOF) ||
(sqlos.sqloods = NULL FETCHED))
                                                /* For checking only ! */
       for (i = 0; i < 27; i++) amptab[i] = 0.0;
     elso oxit(4);
 EDESC SQL CLOSE D CORE;
 if (add > -500.0) {
    ldmar1 = axptab[0] + add;
    aleval[j][0] = axptab[0];
 alse {
   ldmr1 = (double) 0;
   aleval[j][0] = 0;
12 (add > -800.0) {
   ldmrr = emptab[16] + add;
   aleval[j][1] = amptab[16];
else {
   ldmar2 = (double) 0;
   alevel[j][1] = 0;
12 (add > -500.0) {
   ldmar3 = amptab[19] + add;
aleval[j][2] = amptab[19];
alse {
   ldmar3 = (double) 0;
   alevel[j][2] = 0;
if (add > -500.0) {
   ldmar4 = 0.5*(axptab[20]+axptab[21])+add;
```

```
alsvel[j][3] = 0.5*(exptab[20]+exptab[21]);
         ldmr4 = (double) 0;
         alovel[j][3] = 0;
     1f (mdd > -500.0) {
         Idames = amptab[22] + add:
         alovel[j][4] = emptab[22];
     olse {
         ldmr5 = (double) 0;
         alovel[j][4] = 0;
     ldmr[j][0] = ldmr1;
     ldmr[j][1] = ldmrt;
     ldmr[j][2] = ldmr3;
     ldmr[j][3] = ldmr4;
     ldmr[j][4] = ldmr8;
     fprintf(rpt, " 4-3s
                                  0.0 miles
                                                        ", month [index]);
    fprintf(rpt, "\a\t\t
                                                           0.5 miles
                                                                                 -);
    if (ldmar2 >= 45.0) fprintf(rpt, "46.11f", ldmar2);
                       else fprintf(rpt, " -");
    if (ldmar3 >= 45.0) fprintf(xpt, "%6.11f", ldmar3);

also fprintf(xpt, " -");
     fprintf(rpt, "\n\t\t
                                                                                 *):
    fpristf(rpt, "\a\t\t
                                                           1.5 miles
                                                                                 ") ;
    if (ldmar4 >= 45.0) fprintf(rpt, "46.11f", ldmar4);
                       alse fprintf(rpt, " -");
    fprintf(rpt, "\a\t\t
                                                                                 •);
    if (ldmar5 >= 45.0) fprintf(rpt, "46.11f", ldmar5);
                       else fprintf(rpt, " -");
REEC SQL CLOSE LIBBAS;
fillriavals (1)
int 1;
   rta vals1[1][0] = annoyance (ldmar[1][0], &(rta vals1[1][1]));
   rta_vals2[1][0] = annoyanos (ldmar[1][1], &(rtn_vals2[1][1]));
rtn_vals3[1][0] = annoyanos (ldmar[1][2], &(rtn_vals3[1][1]));
rtn_vals4[1][0] = annoyanos (ldmar[1][3], &(rtn_vals4[1][1]));
   rtn vals5[1][0] = manoyance (ldmar[1][4], &(rtn vals5[1][1]));
   rtm_vals1[2][0] = bearing_drange (alevel[i][0], &(rtm_vals1[2][1]));
  rth_vals1[2][0] = hearing_denage (aleval[1][0], a(rth_vals2[2][1]));
rth_vals2[2][0] = hearing_denage (aleval[1][1], a(rth_vals2[2][1]));
rth_vals3[2][0] = hearing_denage (aleval[1][2], a(rth_vals3[2][1]));
rth_vals4[2][0] = hearing_denage (aleval[1][3], a(rth_vals4[2][1]));
   rtm vals5[2][0] = hearing demage (alevel[1][4], & (rtm vals5[2][1]));
  rtn_vals1[3][0] = sloep_interference (aleval[i][0], &(rtn_vals1[3][1]), 1);
rtn_vals2[3][0] = sloep_interference (aleval[i][1], &(rtn_vals2[3][1]), 1);
rtn_vals3[3][0] = sloep_interference (aleval[i][2], &(rtn_vals3[3][1]), 1);
   rtn_vals4[3][0] = sloop_interference (alevel[i][3], &(rtn_vals4[3][1]), i);
  rtn vals5[3][0] = sleep_interference (alevel[1][4], 4(rtn vals5[3][1]), 1);
  rta_vals1[4][0] = sen_land_use (&(rta_vals1[4][1]));
  rts_vels2[4][0] = see_land_use (6(rts_vels2[4][1]));
  rts_vals[4][0] = sem land use (4(rtm_vals3[4][1]));
rts_vals4[4][0] = sem_land_use (4(rts_vals4[4][1]));
  rtn vels5[4][0] = sem land use (&(rtn vels5[4][1]));
  rtn_vals1[5][0] = endangered_species_reproduction (&(rtn_vals1[5][1]));
  rtn_vals2[5][0] = endangered species reproduction (&(rtn_vals2[5][1]));
rtn_vals3[5][0] = endangered species reproduction (&(rtn_vals3[5][1]));
rtn_vals4[5][0] = endangered species reproduction (&(rtn_vals4[5][1]));
  rts_vals5[5][0] = endangered_species_reproduction (&(rtn_vals5[5][1]));
  rtm_vals1[6][0] = livestock_demg (&(rtm_vals1[6][1]));
  rtm_vals2[6][0] = livestock_demg (&(rtm_vals2[6][1]));
 rts_vals3[6][0] = livestock_damg (6(rts_vals3[6][1]));
rts_vals4[6][0] = livestock_damg (6(rts_vals4[6][1]));
```

```
rta_vals5[6][0] = livestock damg (&(rta vals5[6][1]));
     rtn_vals1[7][0] = speech_interference (&(rtn_vals1[7][1]));
      rtm_vals2[7][0] = speech_interference (4(rtm_vals2[7][1]));
     rtn_wals(7)[0] = speech_interference (4(rtn_wals4(7)[1]));
rtn_wals4(7)[0] = speech_interference (4(rtn_wals4(7)[1]));
      rta_vals5[7][0] = speech_interference (6(rta_vals5[7][1]));
     rta_vals1[0][0] = glass_breakage (&(rta_vals1[0][1]));
     rta_vals2[8][0] = glass breakage (& (rta_vals2[8][1]));
     rtn vals3[0][0] = glass breakage (6(rtn vals3[0][1]));
     rts vals4[0][0] = glass breakage (6(rts vals4[0][1]));
     rtn vals5[0][0] = glass breakage (4(rtn_vals5[0][1]));
     rta_vals1[9][0] = effects_comparison (&(rta_vals1[9][1]));
     rtn_vals(9)[0] = effects_comparison (&(rtn_vals(9)[1]));
rtn_vals(9)[0] = effects_comparison (&(rtn_vals(9)[1]));
rtn_vals(9)[0] = effects_comparison (&(rtn_vals(9)[1]));
     rta vals5[9][0] = affects comparison (&(rta vals5[9][1]));
 landuse (rpt. 1)
 FILE *xpt;
 int i:
     fprintf(rpt, "\fdrackiption of lamb use comparishlitt(a/a");
     Sprintf(rpt, "MER: to MESSION: to AIRCRAFT: to MONTH
ardid.arr, misslabl.arr, ac name.arr, mosth[math[i]]);
Sprintf(rpt, "Lend uses competible with the soise exposure produ
                                                                            MONTE: 4s/a/a",
                                                                                 duced by the
   flight\a");
    Sprintf(xpt, "operations associated with the proposed action, as specified\
   in the Joint\n"1:
    fprintf(rpt, Services Land Use Planning Manual, are as noted below under \
      t osso\a");
     fprintf(rpt, "assumptions. These land use interpretations are for the MER \
    fprintf(rpt, "month producing the highest noise exposure.\n");
    fprintf(rpt, "\a 0.0 miles from the MTR Conterline: \a\m");
    rtn_vals1[0][0] = habitability (1, ldmar[i][0], &(rtn_vals1[0][i]), xpt);

Sprintf(xpt, "\n 0.5 miles from the MTR Contarline: \n\n");
    rts_vals2[0][0] = habitability (2, ldmar[i][1], &(rts_vals2[0][1]), rpt);

fprintf(rpt, "\n 1.0 miles from the MTR Contarline: \n\n");
    reprint (spt. 'm 1.0 line from the MER Convertine: \n\n');

tra_vals[0][0] = habitability (3, ldmar[i][2], &(rta_vals][0][1]), rpt);

fprintf(spt, 'n 1.5 miles from the MER Conterline: \n\n');

rta_vals[0][0] = habitability (2, ldmar[i][3], &(rta_vals2[0][1]), rpt);

fprintf(spt, 'n 2.0 miles from the MER Conterline: \n');
    rtn_vals5[0][0] = habitability (3, ldmar[1][4], 4(rtn_vals3[0][1]), rpt);
inconsequential (rpt, i)
FILE *rpt;
int 1;
   fprintf(rpt, "\fDESCRIPTION OF INCOMMEQUENTIAL MOISE EFFECTS\n\n");
    fprintf(rpt, "MFR: to MISSSION: to AIRCRAFT: to MOSTE: to a/a/a",
             sraid.arr, missiabl.arr, as name.arr, month[math[i]]);
    fprintf(rpt, "
                          The following affects of noise exposure produced by the \
flight\n");
    fprintf(rpt, "operations associated with the proposed action on people, \
structures, or\n");
   fprintf(rpt, "animals were determined to be inconsequential in the current \
          ental\n"):
   fprintf(rpt, "assessment: \a\n");
      eck (rpt, 0);
minor(rpt,i, which)
FILE *apt;
   fprintf(xpt, "\fdescription of woise effects of minor importance\n \ n");
   fprintf(xpt, "MFR: to MISSEROW: to AIRCRAFT: to MONTE: to\n\n",
             srcid.arr, misslabl.arr, ac name.arr, month[math[i]]);
   fprintf(rpt, *
                         The following effects of noise exposure produced by the \
   fprintf(rpt, "operations associated with the proposed action on people, \
structures, or\n");
   fprintf(rpt, "animals were determined to be of minor importance in the \
current \n");
   fprintf(rpt, "environmental assessment:\n\n");
     seak (rpt, 1);
```

```
if (which - 1) {
         if (annoy flag == 1) (
bpl_annoyance(rpt);
             anaoy flag = -2;
         if (hearing_flag = 1) {
            bpl hearing (rpt);
             boaring flag = -2;
         if (aloop_flag == 1) {
            bpl_sleep(rpt);
sleep_flag = -2;
        )
if (livestock_flag == 1) {
            bpl_livestak(xpt);
livestock_flag = -2;
         if (speeck_flag - 1) (
            bpl_speech (rpt);
            speech flog = -2;
        if (glass flag - 1) (
            bpl_glass(xpt);
            glass flag = -2;
        1
   3
 considerable (rpt, 1, which)
 FILE *mpt;
 ist 1, which;
   fprintf(rpt, "\fDESCRIPTION OF MOISE EFFECTS OF COMMIDERABLE IMPORTANCE\n\n");
     fprintf(rpt, "Vinestriction of Moission: to AirChAff: to Moiss: ts/n/n",
srcid.arr, misslabl.arr, ad name.arr, month[math[1]]);
fprintf(rpt, " The following effects of noise exposure produced by the \
 flight\a");
     fprintf(rpt, "operations associated with the proposed action on people, \
  tructures, or\n");
    fprintf(rpt, "animals were determined to be of considerable importance in \
 the current \n");
    fprintf(rpt, "environmental assessment:\n\n");
    check (rpt, 2);
    if (which = 1) {
        if (amoy flag = 2) (
bpl annoyance(xpt);
            manoy flag = -2;
       if (hearing_flag = 2) {
           bpl_hearing(rpt);
           bearing flag = -2;
        if (sloop_flag = 2) {
           hpl_sleep(rpt);
sleep_flag = -2;
        if (livestock_flag = 2) {
           bpl_livestak(rpt);
           livestock flag = -2;
       if (speech_flag == 2) {
           bpl_speech (rpt);
           speech flag = -2;
       if (glass_flag = 2) (
          bpl_glass(rpt);
glass_flag = -2;
  }
notoconsidered (rpt, 1)
FILE *tpt;
   fprintf(rpt, "\fDESCRIPTION OF REFECTS NOT COMBINERS IN CORREST \
ENVIRONMENTAL ASSESSMENT(B\B");
  fprintf(rpt, 'MATR: to MESSION: to AIRCRAFT: to MONTE: to/m/m",
srcid.arr, misslabl.arr, so name.arr, month[math[i]]);
fprintf(rpt, " The following potential noise affects were not considered\
in the \n");
  fprintf(rpt, "present analyses: \n\n");
```

```
check (rpt, -1);
      Sprintf (rpt,
                   "\x\nReasons that these potential effects were not considered\
    included\n");
     fprintf(rpt, "insufficient information for evaluation, insufficient \
  procision of \n"):
     fprintf(rpt, "estimation of moise emposure, and lask of generally accepted \
    1"a/ 20 man
     fprintf(spt, "producing quantitative estimates of magnitudes of potential \
  offoots. \n");
  references (rpt)
  FILE *mpt;
  -
     fpriatf(rpt, "\fREFERENCES\a\a");
     fprintf(rpt, "Busnel, R. 1978. \"Introduction,\" in J. L. Fletcher and \
  R. G. Busnel (ods), \n");
     fprintf(rpt, "Effects of Noise on Wildlife. Academic Press, New York.\n\n");
     fprintf(rpt, "Gottereau, P. 1972. Sonic Boom exposure effects: affects on
   enimals. \n"):
     fprintf(rpt, "Journal of Sound Vibration 20 (4):531-534.\n\a");
     fprintf(rpt, "Environmental Protection Agency. 1980. Guidelines for noise \
  Ampect\n"):
     fprintf(rpt, "analysis. Office of Air, Moise, and Radiation, United States \
      roumental\n");
    Sprintf(rpt, "Protection Agency (UMEPA).\n\n");
Sprintf(rpt, "Environmental Protection Agency. 1974. Information on levels \
  ("E/30
     Sprintf(rpt, "environmental moise requisite to protect public health and \
  valfare with as\s');
     fprintf(rpt, "adequate mergin of safety. ERA 550/9 74 004.\n\n");
     fprintf(rpt, Fletcher, J. L., and Busnel, R. G., eds. 1978. Effects of \
 "ciso\n");
    fprintf(rpt, "on wildlife. Academic Press.\n\n");
    Sprints(rpt, "Hershey, R. L., and Riggins, T. R., eds. 1973. Statistical \
    ediction model\n");
    fprintf(rpt, "for glass breakage from nominal scale booms. Federal \
 Aviation \n");
    fprintf(rpt, "Administration Report FAA RD 73-79.\a\a");
    fprintf(rpt, "Einshow, W. R.; Bell, W. B.; Ledson, T. A.; McMeil, E. C. E.;
 and Taylor, J. \n");
    Sprintf(spt, "P. 1970. As associated bibliography on animal response to somio)
       and\a");
    fpristf(rpt, "other load sounds. Washington, D. C.\a\a");
    Sprintf(rpt, "International Civil Aviation Organization (ICRO). 1970. Somic \
   x Rffocts\n");
    Sprintf(rpt, "on the Animal Kingdom. Somio Boom Pasel, Montreal, 12 21 \
       ar 1970.\m\m*);
    fprintf(rpt, "Herman, J. and E. P. Bosttie. 1985. Avistica Hoise Effects. \
 PAA\n");
   fprintf(rpt, "HE 65 2. Federal Aviation Administration, Hoise Abstract \
 Branch, \n");
    fprintf(rpt, "Washington, D. C.\n\n");
    fprintf(rpt, "Nixon, C. W.; Hille, H. K.; Sommar, H. C.; and Guild, H. \
 1966. \"Sonic Booms\n");
    fprintf(rpt, "resulting from extremely low altitude supersonic flight: \
      rements and \n");
   fprintf(xpt, "observations on houses, livestock and people.\" Marospace \
Medical Research\n");
    Sprintf (rpt, "Laboratories, Wright-Patterson Air Force Rase, Report MSEL TR \
 60 52.\p\p");
 fprintf(xpt, "Flotkin, Eenneth J.; Sutherland, Louis C.; and Holino, John A.\n");
Sprintf(rpt, "1987. \"Environmental Moise Assessment for Military Aircraft(a");
   fprintf(rpt, "Training Routes. Volume 2: Recommended Hoise Matris.\" \
   Acrospace\n");
   fprintf(rpt, "Medical Research Laboritories, Wright-Patterson Air Force \
   Base, \a");
   fprintf(rpt, "Report AMEL-TR-67-001.\n\n");
   fprintf(xpt, "Shotton, L. R. 1982. \"Response of Wildlife and Farm Animals \
to Low Level(n");
   fprintf(rpt, "Military Jet Overflight.\" The Reporter II (6):161-166.\f");
bpl_livestak(rpt)
FILE *xpt;
   fprintf(rpt, "\n\nLIVESTOCK DAMAGE\n\n");
   fprintf(rpt, "The U.S. Environmental Protection Agency (EPA) has reviewed \
the literature(n");
   fprintf(rpt, on noise effects in domestic animals (Dufour 1980). In \
general, there is as\s");
```

```
fprintf(rpt, "overall trend for demestic animals to adapt to intermittent \
  (mircraft or\a");
     fprintf(rpt, "aircraft-like) noise under 120 dB (decibels). Busnel (1978)
   reviewed\n");
     Sprintf(rpt, "affects around large mirports and found no evidence to \
  indicate soise-\n");
     fprintf(rpt, "related adverse effects.\n\n");
     fprintf (rpt, "Megative behavioral effects from exposure to scale booms are)
   rare maceq\z");
    fprintf(rpt, "domestic enimals such as borses, entile, sheep and poultry \
  (Gotteream 1972; \m");
     fprintf(rpt, "Fletcher & Busnel 1978; Minshew et al. 1970; Rimon et al. \
  1960: \2"1:
    fprintf(rpt, "International Civil Aviation Organization [ICAQ] 1970). Large\
   form mainels \a");
     fprintf(rpt, "may respond with spontaneous activity (i.e. galloping, \
 bellowing, jumping) . \n");
    fprintf(rpt, "Foultry show mild reactions to the booms in most cases, but in
  loss then tenin');
    fprintf(rpt, "percent of the cases chickens reacted with growing, govering, \
  or soise. \s");
    fprintf(rpt, "There was reported to be no significant effect on agg \
 production, milk\m");
    fprintf(rpt, "production, or food consumption. Bigs, both in the open and \
 in shelter. \n"):
    fprintf(rpt, "show a tendency to be quiet (ICMQ 1970). Observations show \
 greater\n");
    fprintf(rpt, "responses resulting from low-level subscenic flights, \
      rayales, paper\n");
    fprintf(rpt, blown by the wind and other startling stimuli (ICAQ 1970). \
 There appears to\n*);
    fprintf(rpt, "be no report of panic, injury or negative effects upon \
 reproductive stocess\n");
    fprintf(rpt, "(Flotcher & Busnel 1978) .\n\n");
 bol bearing (rot)
 FILE *xpt;
    fpristf(rpt, "\a\aseaRISG DAMAGE RISE\a\a");
    fprintf(rpt, "Rearing loss can be either temporary or pen
 noise-induced\n"):
    fpristf(rpt, "temporary threshold shift is a temporary loss of hearing \
  speriesoed after a\s");
    fprintf(rpt, "relatively short exposure to excessive noise. A noise-induced\
  throshold\n");
   fprintf(rpt, "shift means that the detection level of sound has been \
 increased. Recovery\n");
   fprintf(rpt, "is fairly repid after consection of the noise. A noise-indu
        mt\n");
   fprintf(rpt, threshold shift is an irreversible loss of hearing caused by \
proloaged(n");
   fprintf(rpt, "exposure to excessive noise. This loss is essentially \
 indistinguishable \n");
   fpriatf(rpt, "from the normal hearing loss associated with aging. Fernament\
 hearing loss \n");
   fprintf(rpt, "is generally associated with destruction of the bair cells of \
the inper ear. \n");
   fprintf(rpt, "Based on EPA (Environmental Protection Agency) criteria, \
  maring loss is not\n");
   fprintf(rpt, "expected for people living within noise contours below DML. \
levels of 75 dB\n");
   fprintf(rpt, "(decibels). Further, as stated in the EPA \"Levels Document, \"\
 changes in\n");
   fprintf(rpt, "bearing levels of <5 dB are generally not considered noticeable)
 or\z*):
   fprintf(rpt, "significant (EPA 1974) .\m\m");
   speech (rpt)
     *Ept:
FILE
  fpristf(rpt, "\a\msweece ISTERFERENCE\a\n");
  fprintf(rpt, *Speech interference associated with aircraft moise is a \
primary source of\n");
  fprintf(rpt, "annoyance to individuals on the ground. The disruption of \
leisure\a");
  fprintf(rpt, activities (such as listening to the radio, television, music, \
```

```
and\n");
     fprintf(rpt, "conversation) gives rise to frustration and irritation. \
  Quality speech\n*);
     foristf (rot. "on
                       minstion is obviously also important in the classroom, \
  office, and\n"1:
    fprintf(rpt, 'industrial settings. Researchers have found that aircraft \
  noise of 75 da \n");
    fprintf(rpt, "(decibels) annoyed the highest percentage of the population \
  mbon it\n");
    fprintf(rpt, "interfered with the television sound. Righty percent of the \
 14st of\a"):
    fprintf(rpt, "annoyances for the surveyed population was flickering of the \
 tolovision(n"):
    fprintf(rpt, "picture and interference with casual conversation by mirareft \
            : ("a/gas
    fprintf (rpt, "& Bosttio 1985) . \n\n");
 bpl_annoyanas(rpt)
 FILE *spt;
    fpristf(rpt, "\s\nscan Assorance\s\s");
    fprintf(rpt, "Noise annoyance is defined by the U.S. Environmental \
 Protection Agency (EPA) \n");
    fprintf(rpt, "as any negative subjective reaction to noise on the part of an
  individual or\n");
    Sprintf(rpt, "group (EPA 1978). \"Except in the case of speech interference, \
  however, the\m"):
    fprintf(rpt, "degree of interference is hard to specify and difficult to \
 relate to the \n");
    fprintf(rpt, "level of noise exposure\" (EDA 1978). \"Aircreft noise may \
     . be found(n");
    fprintf(rpt, "annoying because it may startle people, cause houses to shake,\
  or eligit\n");
    fprintf(rpt, "feer of a crash\" (EDA 1978) .\m\m");
 )
 bpl_glass (rpt)
 FILE *mpt;
    fprintf(rpt, "\n\nsTRUCTURAL DAMAGE(n\n");
    fprintf(rpt, "By far, the largest percentage of somic boom demage claims \
 stem from broken \n");
   fprintf(rpt, "or cracked glass. All of the tests conducted in the United \
 States bavo\s");
    fprintf(rpt, "confirmed that glass damage is the most prevalent damage caused\
 by sonic\n");
    fprintf(rpt, "booms (Hershey & Higgins 1973). Because the microstructure of\
 glass is\n");
   fprintf(rpt, "emorphous rather than orystalline, the practical design \
strength of glass \n");
   fprintf(rpt, "is depend
                           at on the surface scratch condition. Glass that has
 boon\n");
   fprintf(rpt, "sandblasted, scretched, or micked will not exhibit the same \
strongth as \a");
   fprintf(rpt, "a properly installed relatively new peac of glass.\a\n");
bpl_sleep(xpt)
FILE *rpt;
   fprintf(rpt, "\a\astem infrarence\a\a");
   fprintf(rpt, "Sleep interference is one of the factors contributing to \
aircraft moise\m");
   fprintf(rpt, "annoyance. Airport mighttime restrictions have been employed \
to minimize \n");
   fprintf(rpt, "this announce. In the case of nighttime operations, as \
   erior maximum\n");
  fprintf(rpt, "sound level (Alm) of 72 dB (decibels) is identified as an \
     table sleep\n");
  fprintf(rpt, "interference condition for a windows-closed condition. This \
corresponds to\n");
   fprintf(rpt, an interior Alm of about 55 dB.\a\a");
   fprintf(rpt, "To provide a basis for estimation of the number of people who \
could be \n");
  fprintf(rpt, "awakened by a specific noise event, data developed by \
```

```
Goldstein and Inkas \n"):
     fprintf(rpt, "(1980) were used to develop a relationship between the SHL \
  "almo and the \n");
     fprintf(rpt, "percent of emposed persons who would be awakened by the noise \
  event. Those \n"):
     fprintf(rpt, "data indicated that the percent awakened by a specific \
  interior noise level\n");
     fprintf(rpt, "can be expressed by the following equation: \a\a");
   fprintf(rpt," Percent Amakened = 1.1(ASML) - 49.5,\n");
fprintf(rpt,"where ASEL = the interior A-weighted sound exposure level.\n\n");
    fpristf(rpt, "Since moise must penetrate the home to disturb sleep, interior\
   noise levels\n");
    fprintf(rpt, "will be lower than outside levels due to the absorption of \
      d energy\n");
    fprintf(rpt, att
                       mustice by the structure. The smount of attenuation \
  provided by the \n");
    fprintf(rpt, "building is dependent on the type of construction and whether \
  " ( " a / erg awobatw
    fprintf(rpt, "open or closed. The Environmental Protection Agency recommends)
   attenuation\n*1:
    fprintf(rpt, factors of 17 dB (decibels) for summertime (windows open) \
  residential\n");
    fprintf(rpt, "conditions and 27 dB for wintertime (windows alcoad) \
      itions. \a");
    fprintf(rpt, "Incorporating the attenuation factors into the above equation \
  gives the\a");
    fprintf(rpt, "following relationships for the percent awakened under \
      artime and a");
    fprintf(rpt, "wintertime conditions:\n\n");
    fprintf(rpt."
                            Percent Awakened (summer) = 1.1(ASEL - 17) - 49.5(x*);
    fprintf (rpt,
                                                        = 1.1(ASEL) - 68.2\n\n");
    fprintf(rpt,
                          Percent Asskened (winter) = 1.1(ASEL - 27) - 49.5\n^{\circ};
    fprintf (rpt, "
                                                        = 1.1(ASEL) - 79.2\a\a");
 check (rpt, which)
 FILE *xpt;
     which;
    fprintf(rpt, "\n 0.0 miles from the MRR Conterline: \n\a");
    annoy flag - which;
    if (rta_vols1[2][1] - which) (
       fprintf(rpt, "Hearing Demage Risk to Residential Population\n");
hearing_flag = which;
    if (rtn_vals1[3][1] = which) (
       fprintf(xpt, "Sleep Interference of Residential Population\n");
sleep flag = which;
   if (rtn_vals1[5][1] - which) {
       Sprintf(rpt, "Reproductive Success or Population Size of an Endangered \
    cles\n");
      species flag = which;
   if (rtn_vals1[6][1] - which) (
      fprintf(rpt, "Economic Demage to Livestock\n");
      livestock flag = which:
   if (rtn_vols1[7][1] - which) {
      fprintf(rpt, "Speech Interference of Residential Population\n");
speech_flag = which;
   if (rtn_vals1[0][1] - which) (
      fprintf(rpt, "Glass Breakage Claims Smoog Residential Population\n");
glass_flag = which;
  if (rta_vals1[9][1] = which) {
   fprintf(rpt, "Effects Comparison Module\n");
   compare_flag = which;
   if (annoy flag != which 66 hearing flag != which 66 sleep flag != which 66
       livestock flag != which 66 speech flag != which 66 glass flag != which 66
       compare flag != which && species flag != which)
       fprintf(rpt, "There were no effects of noise in this category at this \
distance\n");
   fprintf(rpt, "\n 0.5 miles from the MTR Centerline: \n\n");
  if (rtn vals2[1][1] - which) (
```

```
fprintf(rpt, "Frevalence of Annoyance Anong Population\n");
        amov flag = which:
    if (rts_vals2[3][1] - which) (
       fprintf(rpt, "Sleep Interference of Residential Population\n");
sleep flag = which;
    : ("z/pote
       species flag - which;
    if (rtn_vals2[6][1] = which) {
       fprintf(rpt, "Economic Demage to Livestock\n");
        livestock flag = which;
    if (rtn_vals2[7][1] == which) {
       fprintf(spt, "Speech Interference of Residential Population\n");
speech_flag = which;
   if (rtn_vals2[0][1] - which) {
       fprintf(xpt, "Glass Breakage Claims Among Residential Population\a");
glass_flag = which;
   if (rtn_vals2[9][1] = which) (
       fprintf(rpt, "Effects Comparison Module\n");
compare_flag = which;
   if (amony flag != which 66 hearing flag != which 66 sleep flag != which 66
        livestock flag |= which 66 speech flag |= which 66 glass flag != which 66 compare_flag != which 66 species flag != which)

Sprintf(rpt, "There were no effects of noise in this outegory at this \
distance\n"):
   fprintf(rpt, "\n 1.0 miles from the MTR Centerline: \n\n");
   if (rtn_vals3[2][1] = which) {
      fprintf(rpt, "Rearing Dumage Risk to Residential Population\n");
hearing flag = which;
   if (rtn_vale3[3][1] = which) {
    fprintf(xpt, "Sleep Interference of Residential Population\n");
    sleep flag = which;
   species flag = which;
  if (rtn_vals1[6][1] - which) {
      fprintf(rpt, "Economic Demage to Livestock\n");
livestock flag = which:
  if (rtn_vals3[7][1] - which) {
    fprintf(rpt, "Speech Interference of Residential Population\n");
      speech flag = which;
  if (rts_valus[6][1] == which) {
     fprintf(rpt, "Glass Breakage Claims Among Residential Population\n");
glass_flag = which;
  if (rtn_vals3[9][1] == which) {
    fprintf(rpt, "Effects Comparison Module\n");
    compare_flag = which;
  If (annoy flag != which && hearing flag != which && sleep flag != which && livestook flag != which && speech flag != which && glass flag != which && compere flag != which && species flag != which)

fprintf(rpt, "There were no affects of noise in this category at this \
  fprintf(rpt, "\n 1.5 miles from the MTR Conterline: \n\n");
 if (rtn_vals4[1][1] = which) {
    fprintf(rpt, "Frevalence of Annoyance Emong Population\n");
    annoy_flag = which;
```

```
if (rtn_vals4[2][1] - which) (
         *Sprintf(rpt, "Hearing Dumage Risk to Residential Population\n");
hearing flog = which;
      if (rta_vale4[3][1] = which) {
         fprintf(rpt, "Sleep Interference of Residential Population\n");
sleep flag = which;
      if (rtn_vals4[5][1] == which) {
    fprintf(rpt, "Reproductive Success or Population Size of an Endangered \
      : ("a/soto
         species flag = which;
      if (rta_vals4[6][1] == which) (
         Sprintf(spt, "Economic Demage to Livestock\m");
         livestock flag w which;
      if (rts_vals4[7][1] - which) (
         fprintf(rpt, "Speech Interference of Residential Population\n");
speech_flag = which;
      if (rtn_vals4[8][1] == which) {
         Sprintf(rpt, "Glass Breakage Claims Among Residential Population\n");
glass_flag = which;
      if (rtm_vals4[9][1] == which) {
         fprintf(rpt, "Effects Comparison Module\n");
compare flag = which;
     if (annoy flag != which 66 hearing flag != which 66 sleep flag != which 66
         livestock flag (= which 66 speech flag (= which 66 glass flag (= which 66 compare flag (= which 66 species flag (= which)
         fprintf(rpt, There were no effects of noise in this category at this \
  distance \n");
     fpristf(rpt, "\n
                        2.0 miles from the MTR Conterline: \m\m");
     if (rts_vale5[1][1] - which) (
        fprintf(rpt, "Prevalence of Annoyance Among Population\n");
annoy flag = which:
     if (rtn_vale5[2][1] - which) {
        fprintf(rpt, "Hearing Domage Risk to Residential Population\n");
        hearing_flag = which;
     if (rts_vals5[3][1] - which) {
        Sleep flag = which;
    if (rts_vals5[5][1] - which) {
       Sprintf(rpt, "Reproductive Success or Population Size of an Endangered \
     cles\n");
    if (rtn_vale5[6][1] - which) (
       fprintf(rpt, "Economic Demage to Livestock\n");
Livestock flag = which;
    if (rtn_vals5[7][1] - which) {
       fprintf(rpt, "Speech Interference of Residential Population\n");
speech_flag = which;
    if (rta_vals5[8][1] - which) {
       fprintf(rpt, "Glass Breakage Claims Among Residential Population\n");
glass_flag = which;
   if (rtm_vals5[9][1] == which) {
      fprintf(rpt, "Effects Comparison Modele\a");
compare flag = which;
   if (annoy flag != which && hearing flag != which && sleep flag != which &&
       livestock flag |= which 66 speech flag |= which 66 glass flag |= which 66 compere flag |= which 66 speeches flag |= which 66
       fprintf(rpt, "There were no affects of noise in this category at this \
rptesen.pd -- Asas Main Progress (Temporary driver for the
                         report generator
```

```
finciado (etdio.b)
                                      /* The usual stuff, of course */
  #include  process.b>
#include   ctring.b>
                                       /* Bonder for calls to MS-DOS */
                                      /* String menipulation header */
  #include <time.b>
  BINC SQL BEGIE DECLARE SECTION:
  HINC SQL INCLUDE hostwars.h;
  BURC SQL INCLUDE Saharris.h;
  MINE SOL MED DECLARE SECTION;
  MINE SQL INCLUDE SQLCA;
                                      /* SQL Communication Area
                                                                         */
  #define SQLCA STORAGE CLASS
  finolude "asen.h"
                                       /* Standard ASAN Mondor file */
                                      /* In agan.pd it must be here */
/* since we need to initialize */
                                      /* character erroys!
  char targv[15];
  main (argo, argy)
  int ergo;
cher *ergv[];
  int i, j, myonme();
  static char *legal_notice[11] =
  ("\a\a\a\a\t\t\tRESTRICTED RIGHTS LEGED\a\a",
  'tree, deplication, or disclosure is subject to restrictions \n",
"\t as set forth in subdivision (b) (3) (ii) of the \n",
 "\t as set forth in subdivision (b) (3) (ii) of the\n-,
"\t Rights in Technical Data and Computer Software Clause\n",
"\t at 52.227-7013 of the DOD FAR Supplement.\a\n",
  *\±\±\±
           10 MOULTON STREET\n",
Cambridge, MA 02238\n",
  *\t\t\t
  */#/#/#
                617-873-3000\m\m\m",
        User Interface Copyright (C) 1985, Res Laboratories Incorporated\n*,
  "/#/#/#
            All Rights Reserved");
 extern cher *malloc();
 world empones ();
 FILE *fopes();
 if (args - 1) {
    printf("\nUsage: RFTASAW assessment name printfile name");
printf("\n The printfile name is optional: ");
    printf("if unspecified printer [prn] is assumed.\n\z");
 printf("40[25", 27);
 for (i = 0; i < 11; i++) printf("4s", legal notice[i]);
to abort . \a\a");
    i = getab();
     } while (i != ' ');
printf("ASAN Report Module starting....");
 stropy(workspace.arr, argv[1]);
 strust (workspace.arr, "/");
 street (workspace.arr, univped);
workspace.len = strlen(workspace.arr);
EREC SQL COMMET : workspace ;
if (sqloa.sqloode) ( maccess;
      printf("\nLogon failed\nts", sqlon.sqlerms.sqlerms); exit(4);}
HERC SQL SELECT myid, myprivs, mysen
                 FROM sys . Tempusar
DFTO :userno, :0 auth, :my name;
my name.arr[my name.len] = '\0';
stropy(Assessment.name, my_name.arr); /* Store results in global */
Assessment.id = userno;
                                              /* ASSESSMENT structure
EXEC SQL SELECT description FROM table of contents ISTO : workspace
         WHERE idember = :userno;
if (sqlos.sqloods) {
  printf("\mlogon: %s", sqlom.sqlarma.sqlarma);}
```

```
also (
    j = (sixeof ASSESSMET.desc) -1;
    if (workspace.len >= j) {
    for(i = 0; i < j; i+) Assessment.desc[i] = workspace.arr[i];
Assessment.desc[j] = '\0'; }
clse stropy(Assessment.desc, workspace.arr);</pre>
if (arga > 2)
    stropy (targy, argy [2]);
    stropy (targy, "pra");
Uinit():
printf("to[24;18",27);
exit (2) ;
callrpt()
   report (targy) ;
callrpt3()
   report3 (targy, 0);
callrpt4()
   report3 (targy, 1);
```

B.1 C Language Source Code

```
ASAN Refeats Modules
      Created: January 8, 1987
     The return or success codes returned by the procedures in this
     module have the following meanings:
14/1/1
             -2 = execution is not possible because the module is
                  not implemented yet
            -1 = execution is not possible because the available
                 input is incomplete or improper
             0 = the precision of the estimate is satisfactory
1 = the modula executed, but the precision of the
                  estimate is unsatisfactory
     The severity of effect codes returned by the procedures in this
     module have the following meanings:
            -1 = effect not considered in the current analysis
             0 - magnitude of predicted effect is inconsequential
/*
/*
/*
             1 = magnitude of predicted effect is of minor imports
             2 = magnitude of predicted effect is of considerable
                 importance
#include "stdio.b"
int table[20][5] = {0, 0, 0, 30, 25, 0, 0, 35, 30, 25, 0, 0, 35, 30,
                       0, 0, 0, 0, 30, 25, 1, 35, 30, 1, 1, 1, 0, 35, 30,
                       25, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 30, 25, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1;
char table2[20][80] = { "Family housing", "Bachelor housing",
                       "Transient lodging - botals, motals",
                       *Classrooms, libraries, churches*,
*Offices and administration buildings, military*,
                       "Offices - business and professional",
```

```
"Ecspitals, medical facilities, nursing homes",
                             "Dental clinic, medical dispensaries",
                             "Outdoor music shells",
                             "Retail stores, restaurants, banks, movie theaters",
                             "Flight line operations, maintenance and training",
                             "Industrial, manufacturing and laboritories",
                             "Outdoor sports areas, outdoor spectator sports".
                             "Flaygrounds, active sport recreational areas",
"Beighborhood parks", "Gymnasiums, indoor pools",
                             "Outdoor - frequent speech communication",
                            "Outdoor - unfrequent speech communication",
"Livestock farming, unimal breeding",
"Agricultural (except livestock)" );
habitability (which, ldm, effectoods, rpt)
double ldn;
            *affactuode, which;
PILE
            *zpt;
/* The above tables and below look-up computations were derived from
the Joint Services Boise Planning Manual as referenced in Table 6.3
of Theodore J. Schults's book, Community Boise Rating, Second Edition
     (1902)
   int i, inde
   cher nems [15];
   12 (1da > 65 44 1da <= 69) (
       index = 4;
        *effectoode = 1:
   also if (ldn <= 74) {
       *effectoode = 2:
   also if (ldm <= 79) {
       index = 2;
       *effectoode = 2:
   also if (ldm <= 04) {
       index = 1;
       *effectoods = 2:
   also if (lds (wes) {
      index = 0;
       *effectuode = 2;
  if (ldn < 65) {
    Sprintf(rpt, " The following are compatible land uses: \n");
    for (i = 0; i < 20; i++)</pre>
      fprintf(rpt, "
                                 to \a", table2[1]);
       *affectoode = 0;
 }
else if (ldm > 89) {
    fprintf(rpt, " The following are incompatible land uses: \n");
    for (i = 0; i < 20; i++)
    fprintf(rpt, " &s \n", table2[i]);</pre>
 alse (
      fprintf(xpt, " The following are competible land uses: \n");
     fprintf (rpt,
     "\n The following land uses are compatible with interior noise\n"); fprintf(rpt," reduction noted in perentheses:\n"); for (i = 0; i < 20; i++)
         if (table[i][index] != 1 && table[i][index] != 0)
     fprintf(rpt, " ts(td) \a", table2[i], table[i][index]);
fprintf(rpt, "\a The following are incompatible land uses: \a");
     for (1 = 0; 1 < 20; 1++)
         if (table[i][index] == 0)
fprintf(rpt, * 4s
                                     4s \n*,table2[1]);
 rotura (0) ;
```

```
anacyance (ldn, effectede)
  double lda;
 1nt
           toffortrode:
 /* The below calculation of percent of the population that will be highly
      annoyed by a sound of level Idn was copied from Theodore J. Schultz's article, "Synthesis of social surveys on noise annoyance", published in
      the Journal of the Acoustical Society of America, Vol. 64, No. 2, August
      1978, pp 377-405.
     double perha, pou();
     1f (ldm < 40 || ldm > 05) {
         *effectoode = -1;
         roturn (-1);
           arks = 0.9553 * lda - 0.0401 * pow(lda,2.) + 0.00047 * pow(lda,3.);
         1f (perha < 5)
            *affectoode = 0;
        alse if (parks <= 10)
            *effectoode = 1;
        alse if (perha <= 20)
            *effectoods = 2;
            *affactoode = 2;
       roturn(0);
 hearing_damage (alevel, effectoods)
 double slevel;
 /* The calculation of ea was derived from William Burns' book, Hoise
     and Man, Second Edition (1973), page 238. The dB loss values were read from the 504 curve on the bottom graph on page 239 of the same
                              /* ea = A-weighted noise immission level
    int on, temp;
    es = (int) alevel + 10; /* 10 is derived from 10*log(duration of sound
                                      exposure in years) which is assumed to be 5
                                     years bere
    temp = on 4 5;
                              /* round to the mearest 5 dBs
    if (temp <= 2.5)
       on - temp;
    alee
       on += (5 - temp);
/* ea of 85 -> 50% of the population would experience a 1.2dB hearing loss */
/* 90 -> 2.2dB loss, 95 -> 4.5dB loss, 100 -> 9.7dB loss */
/* 105 -> 14.1dB loss, 110 -> 22.3dB loss, 115 -> 31.2dB loss */
/* 120 -> 40.0dB loss, 125 -> 43.1dB loss, 130 -> 43.1dB loss */
   if (aa <= 95)
       *affectoode = 0:
   else if (es <= 110)
        *effectoode = 1;
   return (0);
sleep_interference (slevel, effectoods, 1)
double slevel;
         *effectoods, 1;
  double per awakened;
   if (i > 4 && i < 10) /* sweeth */
per_awakened = 1.1 * alevel - 68.2;
                              /* NIMTER */
      per_awakened = 1.1 * alevel - 79.2;
   if (per_swakened <= 5.0)
```

```
*effectoode = 0;
     also if (per awakened <= 10.0)
*affectoods = 1;
       *effectoode = 2;
    roturn (0);
 sem_load_use (effectuade)
int *effectuade;
    *affectoods = -1;
    metura (-2);
 endangered species reproduction (affectoods) int *effectoods;
    *effectoode = -1;
    roturn (-2);
 livestock_damg (affectoods)
int *affectoods;
    *effectoods = -1;
   roturn (-2);
 speech_interference (effectuode)
int *effectuode;
   *effectoode = -1;
   return (-2);
glass_breakage (effectoods)
int *effectoods;
*effectoods = -1;
  roture (-2);
effects_comparison (effectcode)
ist *effectcode;
*effectuode = -1;
cu.a -- ARM GRASS color stilities.
          THIS CODE ASSUMES 256-COLOR LUT AND 2 OVERLAY PLANTS.
 finalude "grass.h"
finalude "gglobs.h"
init_colors ()
 dant j;
   /* 777 ( C_CURSOR , 255 , 255 , 285 ) */
   TaltCI(C_BEG , 0, 0, 0);
   InitCI ( C SCR FRAME, 255 , 255 , 255 );
```

```
InitGI( C WIN FRAME, 255 , 255 , 255 );
InitGI( C LISG FRAME, 255 , 255 , 255 );
InitGI( C LISG TRICT , 255 , 255 , 255 );
                            , 1, 1, 1);
, 255, 0, 0);
, 0, 255, 0);
       InitCI ( C BLACK
       Initci ( C RED
       TaitCI ( C COOM
       InitCI ( C BLUE
       Taite( C MELEON , 255 , 255 , 0 );
Taite( C MELEON , 255 , 0 , 255 );
Taite( C CYAN , 0 , 255 , 255 );
       InitCI ( C WHITE
                              , 255 , 255 , 255 );
       /* for MGA elevations, use a smooth palotte at low intensity */
       ig_pelet ( C_187 msa , som msa c , 0.25 , 0.50 );
       /* for estagories, use a reposting smooth palette at high intensity */
      for ( j = C_1ST_CAT ; j <= MAX_C - C_CAT_REPRAT + 1 ; j += C_CAT_REPRAT )
      ig pelet ( ) , C CAF NEWEAT , 0.50 , 0.50 );
if ( ) < MAX C )
           ig_pelet( j , max_c - j + 1 , 0.50 , 0.50 );
      next_cet_pv = C 187 CAT; /* initialize pizzel to use for cetagory */
  ig_palet ( fpv , nalrs , i , s )
                                             /* load smooth palette in Tmagraph LUT */
    int fpv;
int nolrs;
                                                  /* first LOT location to load */
                                                  /* how many LUT locations to load */
    double 1, a:
                                                  /* intensity, saturation */
      double kine, k, r, g, h;
      if ( (fpv < 0 ) || ( aclrs < 1 ) || ( fpv + aclrs - 1 > MAX C ) }
           M.COTT ("7ig pelot: bed paremeter");
          roturn ( -1 );
     hims = 360.0 / (double) malrs;
     for ( pe = fpe ; pe < fpe + mairs ; pe++ )
          hisrgb( h , i , s , &r , &g , &b );
InitCI( pv, dround(r * 255.0), dround(g * 255.0), dround(b * 255.0) );
          h to hine;
 * hisrgb() -- converts (h,i,s) color to (r,g,b) intensities
                 hisrgb( h , i , s , &r , &g , &b );
 * calling args (normalized before use):
    0.0 \leftrightarrow h \infty 360.0 (red = 120.0, green = 240.0, blue = 0.0)
0.0 \leftrightarrow i \leftrightarrow 1.0
0.0 \leftrightarrow s \infty 1.0
    returned args:
      0.0 C = C 1.0
                           0.0 <= g <= 1.0
                                                   0.0 cm b cm 1.0
hisrgb (h,i,s,r,g,b)
  double h, i, s, *x, *g, *b;
    /* normalize calling args */
    while ( h < 0.0 ) h += 360.0;
    while (1 > 360.0) h -= 360.0;
while (1 < 0.0) 1 += 1.0;
while (1 > 1.0) 1 -= 1.0;
    While ( # < 0.0 )
                            s += 1.0;
    while ( s > 1.0 )
   if (i > 0.5) n = i + s - (i * s);
also n = i * (1.0 + s);
```

```
m2 = ( 2.0 * 1 ) - m;
                (h < 60.0) *r = m2 + (m - m2) * (h / 60.0);
      also if (h < 180.0) *r = m;
else if (h < 240.0) *r = m2 + (m - m2) * ((240.0 - h) / 60.0);
      if \{h < 120.0\} *g = m2;
else if \{h < 180.0\} *g = m2 + \{m - m2\} * \{\{h - 120.0\} / 60.0\};
else if \{h < 300.0\} *g = m;
                                *g = m2 + (m - m2) * ( (360.0 - h ) / 60.0 );
     if (h < 60.0) %b = m;

clse if (h < 120.0) %b = m2 + (m - m2) * ( (120.0 - h ) / 60.0 );

clse if (h < 240.0) %b = m2;

clse if (h < 300.0) %b = m2 + (m - m2) * ( (h - 240.0 ) / 60.0 );

/* quantiquable */
 /* cad of ca.c */
  #define DB (str)
  * needs datum for where's my finger on map.
     show coordinates of specified location on map.
#include <stdio.b>
#include "asantype.h"
                   /* DEFINED IN COLUMNICS CODE TO BE SUPPLIED BY FAS: */
double shudist;
extern cher dlam[][12];
                   /* ASSUMED TO BE DEFINED ELSEWHERE IN ASAM DEER CODE: */
COCKDINATE ent;
COORDINATE show;
ASSESSABLE ASSESSABLE
cher idptofint[6];
int shwarealts;
int shwarealowi;
int shwaresPSF;
int shwarenfurl;
extern int mea DEROG FEATURES: /* for debug */
main ()
   Ginit ();
                                    /* initialize graphice */
   DB( stropy( dlnam[0] , "FirstHmp" ); )
DB( stropy( dlnam[7] , "JustHmp" ); )
DB( stropy( dlnam[14] , "Last_Hmp" ); )
    MENA DEROG FRATORES = 1;
                                    /* emable T debugging features */
   Utnit ();
                                     /* disappear into U */
   SLOTE (**** inside dummy() ****);
 int ent;
   SLOUTS ("*** inside lat2dec() ***");
```

```
logides ( est )
   int out;
     #LOUTE (**** inside lon2dec() ****);
 Adallocan ( arr )
unsigned char *arr;
   f
     SLOUTS ("*** inside ASAHooma() ***");
 /* end of dasan.c */
 do.a -- ASAW GRASS coll file headlers.
  define FUTRACTOR 0
                              /* = 1 if okey to use FutRest */
 #dofine DB (str)
 ĝinaludo "grass.h"
ĝinaludo "gglobs.h"
 #include cfast1.b>
 #include <eys\types.b>
 finclude <py/stat.b>
 extern char
              DMA elev being drawn;
 static char
               fam [80];
 static int
               £b;
static int
               abytes;
statio int
               SCFTOW;
 static char
               zbuf [MANCOLE] :
               wher [MANDOLE];
 static cher
d_coll ()
    int r, o;
    int on, dew: /* drawing-method-test only */
    set_display_parems ();
                                     /* set up window & viewport */
    sprintf( fnem, "4s\\4s\\call\\4s",
     gisdbase, mapset, location, layer2add);
    if ( (fh = open (fnem , o_NDONLY | o_NIMARY ) ) = -1 )
       SLOOTS ( "1d call: open to failed" , facm );
       return ( -1 );
   SETTOW - 0;
# 1f PUTRASTOR
                      /* color is wired in cell file */
d also
              /* major kludge alart */
# endif /* FUTRASTOR */
   olip_to_window();
   for ( r = 0 ; r < W_Brows ; r++ )
       if ( ( mbytes = read( fh , mbuf , W_mools ) ) := W_mools )
          DCEBR( "ts out of data at row td" , famm , x );
          return ( -1 );
      1
     if PUTRASTOR
      if ( DOR elev being drawn )
                                           /* fiddle with colors */
          for ( oa = 0 ; oa < W nools ; oo++ )
           if ( zbuf[aa] (= 0 )
              rbuf[cc] = ( (int) ( ( (double) rbuf[cc] / 17. ) + 1. ) );
```

```
PutRast( H_1 , W t - sorrow , W_1 + W_mools , mbuf );
          for { oc = 0 ; oc < W mools ; oc++ )

if ( mbuf[oc] i= 0 )
                  if ( DSA_elev_being_drawn ) /* fiddle with colors */
SetFG( (int) ( (double) mbmf[cd] / 17. ) + 1. ) );
                      SotFG( mbuf[do] );
                  Mil + cc + 1 , Wit - serrow + 1 , 0x40 );
     endif /* PUTRASTOR */
         scrout+;
 # Afder DOWN CARE
     if ( ( mbytes = read( fh , mbuf , W mools ) ) > 0 )
         DCERR( "4s has data laft over (4d bytes)" , fasm , abytes );
         return ( -1 );
 # codif /* DONT_CARE */
     aloss ( fh );
     alip to sarees ();
     return ( 0 );
 screen2coll ()
     MICOTO ( "surecalcall() is not yet available" );
 static DCERR ( a , b , a , d , a , f , g )
    char megbuf[80];
char tupbuf[80];
    oprintf( impbuf , a , b , a , d , a , f , g );
sprintf( megbuf , "?d_oell: " );
street( megbuf , impbuf );
    SLOUTP ( megbef );
    close ( fk );
    alip_to_sarees();
/* end of da.a */
dd.c -- AGAN GRAES code to draw a "digit" file on the scree
 #define DB (str)
#include "grass.h"
#include "gglobs.h"
finalude (fontl.b)
#include <sys\types.h>
#include <sys\stat.h>
finalede (io.b)
static char
                faca [80] ;
static FILE
                *dfp;
static char
                mbuf[100];
static int
                fline;
static cher
                b type;
                                                         /* block type */
static int
d_digit ()
```

```
/# index to latest son-whitespace char (-1-mone) #/
        set_display paress ();
                                                  /* set up window & viewport */
        sprintf( fnom, "%s\\%s\\digit\\%s",
  gisdbase, mapset, location, layer2ndd);
        if ( ( dfp = fopen( fam , "r" ) ) == BULL )
            MACOTE ( "Id_digit: fopen to failed" , faom );
            motume ( -1 );
       fline = 0;
       /* skip the 14 lines of unwented header stuff */
       for ( 1 = 0 ; 1 < 14 ; 1++ )
       1
            flino++;
            if ( fgots ( mbuf , 100 , dfp ) - monL )
                DDERG( "fgots arror" );
                roturn ( -1 );
       clip to window();
        * *** ELIDGE ALERS:
        * We know that current digit files contain exactly one category each,

and that next_cat_pv has just been incremented in build legend(), so

the following color selection code is MDCE simpler than it caght to be.
        * Color/lagend stuff will be VERY screwed up if any of the subsequent
           error returns is taken.
      SotFG( next_ost_pv - 1 );
      /* process the digit file one block at a time */
      maile ( ( b_type = fgoto( dfp ) ) != BOF )
 DB (SLOOTS ("dd: 1st char of block = to = to", b_type, b_type);)
          switch ( b_type )
               0260 'A':
                                                                  /* polyline */
                        12 ( fgets( dfp ) |= ':' )
                            DDERR( "bad char follows block type" );
                            return ( -1 );
 DB (SLOUTS ("dd A: got ':'");)
                       if ( fecanf( dfp , "*d" , &count ) < 1 )
                            DDERR( "bed count or early BOF" );
                            return ( -1 );
DB (MLOUSS ("dd A: got count=4d", count);)
                       flinott;
                       if ( focuse( dep , " tif tif " , Edwl , Edyl ) < 2 )
                            DDERR( "bed 1st warter or early mor" );
                            return ( -1 );
DB(printf("dd A: got lst vertex %lf %lf(n",dx1,dy1);)
for ( i = 0 ; i < count - 1 ; i++ )
                       1
                           fling++:
                           if ( from f ( dfp , " % lf % lf ", &dx2, &dy2) < 2 )
                                DDERR( "bad data or early BOF" );
                                return ( -1 );
                           }
DB(printf("dd A: got next vertex %lf %lf, call d_line()\n",dx2,dy2);)
                           d line();
                           dz1 = dz2;
```

int 1, 3, x, y;

```
dy1 = dy1;
  DB (SLOUTS ("dd A: done");)
                 0360 'T':
                                                                     /# tost #/
                          flinott:
                           1f ( fgets( dfp ) != ':' )
                               DEER( "bed char follows block type" );
                               roturn( -1 );
  D& (SLOURE ("dd T: got ':'");)
                          if ( fgets ( mbef , 100 , dfp ) == HOLL )
                               DDERR( "bed string or early ROF" );
                               return ( -1 );
                          ومله
                          1
                              i = 0; j = 0; last_sig = -1;
                               while ( whaf[i] |= '\a' )
                                   if ( ( sbuf[i] = ' ' ) || ( sbuf[i] == '\t' ) )
   if ( last_sig == -1 ) /* toes leading white */
                                             1++;
                                                                    /* keep embedded white */
                                   txt[j++] = xbuf[i++];
clse if ( xbuf[i] = '\0' ) /* embedded null */
                                        breek;
                                                                     /* regular old char */
                                       last_sig = j;
txt[j++] = xbuf[i++];
                              txt[last_sig+1] = '\0';
                                                                /* toss trailing white */
 )
DB(SLOTTS("dd I: got '%s'",tit);)
                         fline++;
                         if ( focunf ( dfp , " % lf % lf " , & dzi , & dy1 ) < 2 )
                             DDERR( "bad location or early BOF" );
                             roturn ( -1 );
 DB (printf("dd T: got loc %lf %lf\a",dx1,dy1);)
                         flinett;
                        if ( focusef( dfp, " bif bif bif bif bd bc ", sheight, Swidth, Srotation, Selant, Sfont, Sjust) < 6 }
                             DDERR( "bed data or early BOS" );
                             return ( -1 );
DB (SLOUTS ("dd T: got parms
                                 sters, call d_text()");)
                        d taxt ( UTM COORDS );
Da (store ("dd A: done");)
                        brook:
                       flino++;
                        DDERR( "bed block type" );
                        roturn ( -1 );
         }
    }
     falose ( dfp );
    clip to screen();
return(0);
static DDERR (a, b, a, d, a, f, a)
    char megbuf[80];
char tmpbuf[80];
    sprintf( tmpbuf , a , b , a , d , e , f , g );
sprintf( msgbuf , "?do ts (td): " , fnem , fline );
stront( msgbuf , tmpbuf );
    SLOOM ( magbat );
folose( dfp );
```

```
alip_to_seroes();
   /# end of dd.a #/
   draw.c -- code to draw actual graphics
  #define DB (str)
  @include "grass.h"
@include "gglobs.h"
                           (W_1 + dround( (NY - V_most ) / UNM per pinel ) )
(W_b + dround( (NY - V_south ) / UNM per pinel ) )
  #define XPIX(xx)
  @dofine TPIX(YY)
  extern int
                   zfoat, yfoat;
                                           /* Imagraph text persons */
  orters ist
                   chardepth, charwidth;
  static int
                  t_0180 = 1;
                                           /* text soom factor (1-16) */
  statio ist
                  mpir, ypir;
  d line ()
                                   /* draw a line */
      aline( xpxx(dx1) , xpxx(dy1) , xpxx(dx2) , xpxx(dy2) , 0x40);
 d_text ( stype )
                                   /* draw text */
    char stype;
                                   /* SCREEN COORDS OF THE COORDS */
     int i, x2, y2;
     if ( stype - THE COOKES )
         mpis = MPIX( dx1 );
         Mbix = Mark( dyl );
     else /* screen cooms */
         spiz = izl;
         ypiz = iy1;
     t_sise = 1;
     if ( foat - 'R' )
     xf = xpix - ( strlea( trt ) * charwidth );
else if ( fost == 'C' )
        rf = rpix + ( ( strlea(txt ) * charwidth ) / 2 );
/* assume font = 'L' */
     olso
        mf = mpin;
    Yf = ypix - ( chardepth / 2 );
                                         /* supplied Y is vertical center */
    for ( i = 0 ; i < strice( txt ) ; i++ )
        zfort = zf;
        yfoat = yf;
DB(SLOOTS("Spata: Mfost=4d yfost=4d charato=0to", Mfost, yfost, txt[i], txt[i]);)
        if ((txt[i] = ' ') || (txt[i] = '\t')) /* space or tab -> space */
            If to charwidth;
        also if ( txt[i] < 040 )
                                         /* ignore otrl chars altogether */
                                         /* send everything also to screen */
            gputc( txt[i] , t_size , 0 );
xf += charwidth;
   }
   SotPata ( -0 );
                                         /* restore solid pattern */
/* ead of draw.c */
```

```
gglobs.s -- globals and parameters for last cales.
            **** WARRIES: THIS FILE MUST MATCH gglobs.h ****
   dinalada "grass.h"
  ohar
         dinem[MRX_DLAYERS] [12]; /* displayed layer names */
  int
                                 /* how many layers now displayed */
         num dlayers;
 LLTER
         log [MAX CATS] ;
                                 /* legend/out data structure */
  int
         num llines;
                                 /* how many legend/out data entries now */
         sest_est_pv;
                                 /* next pirval to use for ostogory */
 int
                                 /* current mapset ("ASAH") */
/* current location name ("Salls") */
 cher
         *espect;
 char
         *location;
         *gladbase;
  char
                                 /* current map data base dir ("\grass\maps") */
         *Pesse [12]:
                                 /* GEFFORT Viceport name ("C"-scerse, etc.) */
         winnene [12];
                                 /* current window name */
         layer2add[12];
                                 /* name of layer to add to display */
                                /* name of layer to remove from display */
/* name to use for layer being saved */
/* layer is: 'G'= cell, 'D'= digit, 'L'= DLG */
  char
         layer2del[12];
 char
         layersavenemo[12];
 char
         laytype;
 char
         window frame drawn;
                                 /* YES if window frame drawn, also NO */
                                /* YES if legend drawn, also NO */
/* TES if DEA elevations are drawn, also NO */
 char
         legend drawn;
         Des aley draws;
 double
         dz1, dz2, dy1, dy2;
                                 /* some vertices */
 1nt
         im1, im2, iy1, iy2;
                                 /* some vertices */
 char
         tat [100];
                                /* data mooded to draw text */
 double
        height, width, rotation, slant;
         foot;
 1mt
         HE - SCR T;
                                /* current window, in screen coords */
 int
        W b = SCR 1:
 int
         Wr = OCR R;
 int
 int
         W BEOUR :
                                /* how many rous */
                                /* how many columns */
 124
 int
        V_proj;
                                /* current viewport, in UTMs */
 int V some;
double V morth;
        V south;
       V_west;
 double
 double
 double V no res;
 double
        V ew res;
 int
        V formet:
double Uniper pinel;
grass.c -- ASAN graphics main routines
 #define DB (str)
#include "gress.h"
@include "gglobs.h"
               DMM elev being drawn;
static char dflt_mapset[]
               = { 'a','s','a','a','\o' };
static char dfit location[] =
                { 's', 'a', 'l', 'l', 's', '\o' );
static char dflt_gisdbese[] ==
               { '\\','g','=','a','e','a','\\','æ','a','p','a','\or };
static char dflt_winnome[] =
                {'w','1','m','d','o','w','\o'};
static char
               fnem[80];
static FILE
               arp;
static int
               after Uinit;
static char
               del_layer_im_progress;
                                              /* MLUDGE ALERT */
```

```
Ginit ()
                                       /* call me first */
       mapset = (cher *) dflt mapset;
                                               /* used to be environment wars ... */
       location = (char *) dflt location;
gisdbase = (char *) dflt gisdbase;
       stropy ( winners , dflt winners );
      bogin_IG_graphics();
          load default polette(); **/
      InitFont();
       init colors();
      after Vinit = 10;
       clear_screen();
       after Uinit - THE;
      IMA elev boing draws = EO;
  now wiew ( wate )
                                      /* change viewport */
    Char *vetr:
      if ( stromp( votr , vpame ) == 0 )
                                                        /* ignore if no change */
      if ( stromp( vstr , "Salls.C" ) = 0 ) ||
  ( stromp( vstr , "Ajo.M" ) = 0 ) ||
  ( stromp( vstr , "Salls.M" ) = 0 ) ||
  ( stromp( vstr , "Ajo.F" ) = 0 ) ||
  ( stromp( vstr , "Salls.F" ) = 0 ) )
          stropy( vposme , vetr );
           clear screen ();
      also
          SLOUZP ( "? unknown view ts" , vetr );
 clear_screes ()
                            /* erase screen & clear parameters */
     int 1:
     erase graphics display();
     for ( i = 0 ; i < MAX_DLAYERS ; i++ ) /* no layers displayed */
         stropy( dlnes[1] , "" );
     am dlayers = 0;
     if ( after timit )
                                     /* MEMVALS before Uinit -> bisarre crashes */
         MENVALS () ;
erese_graphics_display ()
                                    /* just erase the screen */
     alip to sereen ();
     als ( C mms );
                                     /* clear screen to background color */
     Sotro ( C SCR FRAME );
                                     /* draw screen frame */
    aRect ( SCR L + 1 , SCR B + 1 , SCR R - 1 , SCR T - 1 , 0x40 );
                                     /* window frame is gone */
    window frame drawn = 20;
                                    /* legend is gone */
/* DMA elevations are gone */
    legend drawn = HO:
    Deck aley drawn = 20;
add_layer ()
                                    /* add a layer to display */
    if ( stromp( vpame , "" ) == 0 )
                                                      /* if no active view, give up */
        SLOUTP ("choose a view first");
        stropy( layer2add , "" );
        MENVALE () ;
       roturn ( -1 );
```

```
for ( i = 0 ; i < strlen( layar2add ) ; i++ ) /* assure zone is upparamse */
if ( ( layar2add[i] >= 'a' ) if ( layar2add[i] <= 'r' ) )
                 layeriadd[1] - 040;
       if ( stromp( layar2add , "ma min" ) == 0 ) /* special case */
            draw_dra_alev();
           return(0);
       /* see if it exists */
       laytype = ' ';
       sprintf( face, "%s\\%s\\digit\\%s",
                                                                   /* digit file? */
         gischese, memost, location, layerladd);
      if ( (fp = fopen(fasm , "r" ) ) != HOLL )
laytype = 'D';
if ( laytype = '')
                                                                   /* no, cell file? */
           sprintf( fnom, "$s\\$s\\$s\\cell\\$s",
           gischese, mapset, location, layer2ndd);
if ( (fp = fopun(fasm, "r" ) ) != NULL )
laytype = 'C';
       if ( laytype - ' ')
                                                                   /* no, doesn't exist */
           SLOUTS ("fadd_layer: no such layer %s", layer2edd);
stropy( layer2edd , "" );
           MENVALS () ;
           return ( -1 );
      falose ( fp );
     if ( | del_layer_is_progress )
      if ( sum_dlayers >= MAX_DLAYERS ) /* add it to displayed-layer list */
          SLOUTS ("Tadd_layer: screen list is full"):
          stropy( layer2add , "" );
MENVALS();
          return( -1 );
      stropy( diam[sum_diayers] , layer2add );
     sem disyers++;
     build_logend();
                                                       /# add it to legend */
     if ( logend drawn )
         hide_logend();
          show_legend();
     SLOUT( "Drawing to" , layer2add );
     if ( laytype = 'D' )
                                                        /* draw it */
     d digit();
else if ( laytype == 'C' )
         d_col1();
     stropy( layerfadd , "" );
    MENVALS ();
dol_layer ()
                           /* remove a layer from display */
    int i, idx;
    cher save ld;
   for { i = 0 ; i < strice( layer2del ) ; i++ ) /* assure meme is uppercase */
        if ( ( layer2del[i] >= 'a' ) && ( layer2del[i] <= 'a' ) )
layer2del[i] -= 040;
   if ( stromp( layer2add , "DeG HLEV" ) == 0 ) /* special case */
        DMA alov draws - 20;
   /* first remove it from displayed-layer list */
   idx = -1;
                                                                /* find it in list */
   for (i = 0 ; i < non dlayers ; i++ )

if ( stromp( dlama[i] , layer2del ) == 0 )
```

```
1dx = 1:
       1f ( 1dx -- -1 )
       ŧ
            SLOUTS ("layer to is not on display", layeridel); stropy( layeridel , "" );
            moturn( -1 );
      if ( ids < aun_dlayers - 1 )
                                                            /* if it wasm't last in list */
           for ( 1 = idx ; i < num_dlayers - 1 ; i++ )
    stropy( dlam[idx] , dlam[idx+1] );
stropy( dlam[aum_dlayers-1] , "" );</pre>
                                                                       /* all move up */
                                                                       /* erose last */
      am dlayers --;
      MENTALS ();
                                                                       /* ... gratuitous */
        * Actually delete the layer from the graphics display.
       * For now, brute force: erase the graphics screen and
           repaint all layers but the deleted one.
      save_ld = legend_drawn;
                                     /* remember legend drawn */
      orese_graphics_display();
      del_layer in progress = TES;
      for ( 1 = 0 ; 1 < num dlayers ; 1++ )
          stropy( layer2add , dlamm[i] );
if ( add_layer() == -1 )
               SLOOTS ("?del_layer: redraw error on 4s" , layer2add );
               stropy( leyer2del , "" );
               del layer in progress = EO;
return( -1 );
          }
     )
                                                 /* recall lagend drawn */
/* & redraw it if necessary */
     legend drawn = save_ld;
     if ( legend drawn )
         hido_logend();
show_logend();
     del_layer_in_progress = NO;
     stropy( layer2del , "" );
     MEHVALE ();
store screek ()
    /* if screen is blank, give up */
    if ( nes_diayers = 0 )
         SLOUTP("7store_screen: screen is empty -- nothing to save");
stropy( layersaveneme , "" );
         MERVALS ();
         return ( -1 );
    3
    /* if layer with this name already exists, give up */
    sprintf( face, "%s\\%s\\%s\\digit\\%s",
    gischase, mapset, location, layerseveneme
if ( (fp = fopes(fnem, "r") ) != NOLL)
        SLOUTS ("7store screen: layer %s already exists", layersavename); stropy( layersavename , "" );
        HEWVALS ();
        return( -1 );
```

```
sprints( faca, "%s\\%s\\%s\\coll\\%s",
     gisdoss, nepset, location, layersevenes);
if ( fp = fopen( fnem , "r" ) ) = NUL )
          SLOOTS ("Istore_screen: layer to already exists", layersevenese);
stropy( layersevenese , "" );
NEWWALS();
          moturn ( -1 );
     leytype = 'C';
     screenicali();
     add_to_layertst();
     stropy( layersaveneme , "" );
     MENVALS ();
abou dist ()
     SLOUTS ( "This feature is not yet available" );
show_coords ()
    SLOUTS ( "This feature is not yet available" );
edit_colors ()
    SLOUTS ( "This feature is not yet available" );
alip_to_window ()
    SotADR( W1 , Wb , Wr , Wt );
elip to sereen ()
   SetADR( SCR L , SCR B , SCR R , SCR T );
draw das aler ()
                                  /* special breach of add_layer() */
   1mt 1:
  if ( ! del_layer_im_progress )
   if ( num_dlayers >= MAX_DLAYERS ) /* add it to displayed-layer list */
       SLOUTS ("Todd_layer: screen list is full");
        stropy( layer2add , "" );
       HEWVALE ();
       return( -1 );
   stropy( dlass[aum_dlayers] , layer2odd );
   am dlayers++;
  build_des_elev_logend();
                                                   /* special legend too */
  Min_elev_being_drawn = TES;
  if ( stromp( vpnmmo , "Sells.C" ) == 0 )
       stropy( layer2edd , "AJO_E.C" );
       SLOTT ( "Drawing AND E.C (DEA ELEV part 1 of 5)" );
       d_ool1();
      stropy( layer2sdd , "ANO W.C" );
MAGOT( "Drawing ANO W.C (DMA_ELEV part 2 of 5)" );
       d_coll();
       stropy( layer2add , "LUERV.C" );
       SLOUT( "Drawing LUKEV.C (DEER ELEV part 3 of 5)" );
```

```
d_car();
stropy( layerlodd , "NOGAL.C" );
SLOUT( "Drawing NOGAL.C (NGA_NLEV port 4 of 5)" );
           d coll();
          stropy( layer2add , "TOCSH.C" );
          SLOOP ( "Drawing TOCSE.C (Deck_MLEV part 8 of 5)" );
          d_coll();
      else if ( stromp( vpame , "Ajo.M" ) == 0 )
          stropy( layerladd , "AJO E.MA" );
SLOUY( "Drawing AJO E.MA (NEW MINW part 1 of 1)" );
      also if ( stromp ( vpame , "Salle M" ) - 0 )
          stropy( layer2add , "AJO_E.MS" );
          SLOOP( "Drawing AJO E.MS (DESA HLEV part 1 of 4)" );
          d coll();
          stropy( layerladd , "LUERV.MG" );
          SLOUT( "Drawing LUMBY.MS (DESA MLMY part 1 of 4)" );
          4 0011();
          stropy( layer2edd , "NOGAL ME" );
          SLOUT ( "Drawing MOGRL.MS (INCA MLSV part 1 of 4)" );
          d_oall();
          stropy( layer2add , "TOCSE.kg" );
          SLOOP ( "Drawing TOCHE, HE (DAGA MLEV part 1 of 4)" );
          d coll();
      else if ( stromp( vpame , "Ajo.F" ) = 0 )
          stropy( layer2add , "ASC H.FA" );
          MLOUP( "Drawing AND E.FA (DMA ELEV part 1 of 1)" );
          d coll();
     else if ( stromp( vposme , "Selis.F" ) == 0 )
         stropy( layer2add , "MOGRL.FS" );
         SLOOT ( "Drawing BOGAL.FS (DMA ELEV part 1 of 1)" );
         d_oell();
         SLOUTS ( "? no IMM elevation data for this view" );
        DMA elev being drawn = NO;
DMA elev drawn = NO;
return( -1 );
    stropy( layerlodd , "" );
    MENVALS () ;
    ING_elov_being_drawn = NO;
ING_elov_drawn = THS;
dround ( num )
                        /* double-precision-to-integer rounding routine */
    if ( num > 0.0 ) return (int) (num + 0.499);
else return (int) (num - 0.499);
/* and of grass.c */
ig.c -- device driver functions for Tangraph AGC hardware.
 *************
       #define GRAPHICS_DEBUGGING 1
finalude "stdio.h"
#include "acrtc.h"
finclude "imagraph.h"
     ZDEA = 0, ZDE2 = 0;
                                        /* debug switches */
/* Imagraph hardware/software stuff */
```

d call():

```
/* max color intensity for this hardware */
          mor intensity;
                                  /* intensities of 1st 16 colors */
/* handy pointer to 16 model ident */
  Char
          *Palotto;
        *model;
  char
  /* fill petters mak */
  /* Stuff defined in Imagraph libraries */
  ortern int
                 FourBit;
                                  /* 4 => 4-bit, 0 => 8-bit */
 estern Bilstre *plin;
 extern Diketru Diffmodel[];
extern SCHOOLF DasesC;
 arters SCHOOL Opperso;
exters SCHOOL Lowerso;
 /* functions */
 void SGalc();
 Distra *Disopen();
char *palalloc();
char *gotcav();
 void begin Id graphics ()
         Beatra *board:
         ist m, ya;
 #ifdef GRAPEICS DEBUGGING
         200A = 0; 2009 = 0;
         printf("\mannounce every hardware call? (1=yes, 0=no): ");
         scenf ("td", scena);
         AF ( GODA )
             printf("pauses after hardware call announcements? (1=yes,0=no): ");
             scenf ("4d", &@DBP);
 Sendif /* GRAPRICS_DEBUGGING */
         model = geteav("Descript");
         if ( | ( board = Dillopen (model) ) )
             debugout ("\n Billopen failed: Imagraph hardware not found\n");
             omit(0):
         tweaker();
                                        /# lat's tweek hardware #/
         = board->mampix;
         ym = board->ymempin;
         Oppersc.marx = 0;
                                         /* don't use upper screen */
         OpperSC.clipx = 0;
        Oppersonary = 0;
         Opporso. alipy = 0;
        LowerSC.maxx = 0;
                                         /* don't use lower sureen */
        LowerSC.alipx = 0;
        LowerSC.nexy = 0;
        LowerSC.alipy = 0;
        BasesC.nerr = m + 1;
                                         /* base screen for graphics */
        BosesC. clipx = m;
        Besend nery = ye + 1;
        BasesC.clipy = ya;
        SCale (RESET_SCREEN, ShaseSC); /* reset frome buffer pointer */
        SCele (RASE SCREEN, &BeselC);
        IG bdw init();
                                         /* initialise hardware */
        SetOrg( BeseSC.ol, BaseSC.o2); /* soord system on base screen */
        max intensity = (FourRit) 7 15 : 255; /* max color intensity value */
        Palette = palallog();
                                        /* allocate pelette image memory */
        load default pelette () ;
                                         /* load default pelette */
/000
        Cirsors ( &BosesC , 0 ); ***/
                                       /* clear graphics screen to MLACE */
        SetTG( 7 );
                                         /* default foreground is NEITE */
        Set3G( 0 );
                                         /* default beckground is BLACK */
        SetPeta( -0 );
                                         /* default petters is solid */
void end IG graphics ()
       IG how release () ;
                                        /* clean up hardware */
       free (Palette) ;
                                        /* clean up heep */
 }
```

.

¢

.

```
static IG has init ()
                                   /* init hardware */
   DEMINIT();
                                             /* initialise the herdware */
      SetADR(0,0,pMa->maxpix,pMa->maxpix);
taitCr(0,0,0,0);
itxtmode(1); /* get us int
                                             /* got us into graphics for SGR */
      petura (0) ;
 static IS how release ()
                                            /* close bardware */
     itztmode( 0 );
                                            /* get us out of graphics for SGA */
     roture (0);
 load default_pelette ()
     make_default_pelette();
    putlut ( Palette );
     return (0);
 static make default pelotte ()
         int mi, mi34, mi2;
         mi = (FourBit) 7 15 : 255;
                                     /* 75% intensity */
         mil34 = (mi >> 2) * 3;
         mi2 = mi >> 1;
                                       /* 504 intensity */
         pinitCI (Palette, 0. 0, 0, 0);
         pinitCI(Palette, 1, mi, 0, 0);
pinitCI(Palette, 2, mi, 0, mi);
         pinitCI (Falette, 3, 0, 0, mi);
         pinitCI(Palette, 4, 0, mi, mi);
pinitCI(Palette, 5, 0, mi, 0);
         pinitCI(Palette, 6, mi, mi, 0);
pinitCI(Palette, 7, mi, mi, mi);
         pinitCI (Palette, 8, mi2, mi2, mi2);
         pinitCI (Palette, 9, mi34, 0, 0);
         pinitCI (Falette, 10, mi, 0, mi34);
         pinitCI(Felette, 11, 0, 0, mi34);
         pinitCI (Palette, 12, 0, mi, mil4);
        pinitGI (Falette, 13, 0, mi34, 0);
pinitGI (Falette, 14, mi34, 0, mi34);
pinitGI (Falette, 15, mi34, mi34, mi34);
        return (0);
  3
/* end of ig.a */
leg.c -- MANN GRASS legend and ostegory file heading.
 ***********************************
Sdefine DB (str)
finalude "grass.h"
finalude "gglobs.h"
#define LBG FRAME SPACE
                                  ( charwidth / 4 )
                                  ( charwidth )
define LMG PV HEIGHT
                                  ( chardepth - 2 )
Odefine LBG PVZTET SPACE
                                  ( cherwidth / 2 )
extern int
                 chardepth, charwidth;
static int
                log_frume_top;
static int
                log frame bot;
                log frome left;
static int
static int
                leg freme right;
static int
                log frame height;
static int
                log frome width;
```

```
static char
                 fnem [80] ;
  static FILE
                  #£p;
  static ist
  static int
                  fline;
  static char
                  junk [100];
 build_legend ()
                         /* build legend data structure */
      int dlids, 1, 1;
      mun llines = 0;
      for ( dlidx = 0 ; dlidx < sum_dlayers ; dlidx++ )
          sprintf( fnom, "4s\\4s\\asts\\4s",
          gisdbase, mapset, location, dlaca[dlidx]);
if ( (fp = fopen(fam, "r") ) = NOLL)
              SLOUTS ("Thuild log: fopen to failed", face);
             roturn ( -1 );
         fline = 1;
         if ( feant( fp , " %d %s " , &count ) < 2 ) /* read let line */
              BLEGG( "bad count or early BOF" );
             return( -1 );
          for ( i = 0 ; 1 < 2 ; i++ )
                                                          /* skip next 2 lines */
             fline++;
             if ( fgets( junk , 100 , fp ) - HOLL )
             | NLERA( "fgets error" );
                return ( -1 );
         )
         for ( 1 = 0 ; 1 < count ; i++ )
                                                          /* the rest are cats */
             if ( num llines >= MAX CATS )
                                                          /* prevent overflow */
                BLERR( "legend date space full" );
                return ( -1 );
             flino++;
                                                          /* store string */
             if ( fgets( log[num_llines].str , 100 , fp ) = HULL )
                BLERR( "bed data or early BOF" );
                roturn ( -1 );
             /* replace <ret> in string with <auli> */
            for ( j = 0 ; j < strlen( leg[num_llines].str ) ; j++ )
if ( leg[num_llines].str[j] == '\a' )</pre>
                    log[num_llines].str[j] = '\0';
            log(aum_llinos).pv = next_out_pv;
                                                       /* store pirvel */
            next_oat_pv++;
            num_llines++;
        )
       felose( fp );
DS( printf("count=td num_llines=td:\n", downt, num_llines);
DB( for ( i = 0 ; i < num llines ; i++ )
DB( printf( "%s\n" , log[i].str );
DB ( gotab ();
static BLERR (a, b, c, d, a, f, g)
    char megbuf[80];
   char tmpbuf[80];
```

```
sprintf( tmpbuf , a , b , a , d , a , f , g );
sprintf( msgbuf , "Tbuild_lag %s (%d): " , fnem , fline );
stroat( msgbuf , tmpbuf );
       SLOTTE ( magbed );
       falose ( fp );
   show_lagead ()
                              /* draw legend on graphics screen */
       int 1, 5, wid, y;
       if ( legend drawn )
                                                /* if legend is visible, erase it */
           hide leguad();
      log_frame_top = W b - 4;
log_frame_loft = 5;
       wid = 0:
                                                /* find widest legend line string */
       for ( i = 0 ; i < num llines ; i++ )
           if ( ( j = strlea( log[i].str ) ) > wid )
                wid = j;
      log_frome_height = ( nom_llines * chardopth ) + ( LEG_FRAME_SPACE * 2 );
      log_frame_width = LBG_PV_WIDTE + LBG_PV2TET_SPACE
                           + ( wid * charwidth ) + ( INC FRAME SPACE * 2 );
      log_frame_right = log_frame_loft + log_frame_width;
      if ( ( leg_frame_bot = leg_frame_top - leg_frame_height ) < 0 )
           SLOUTS ("?legend frame below sursen bottom");
           leg_freme_bot = 1;
      SetFG( C LEG FRAME );
                                                                  /* draw frome */
      alloot ( log_freme_left , log_freme_bot ,
              leg_frame_right , leg_frame_top , 0x40 );
      y = leg_frame_top - LBG_FRAME_SPACE - chardepth;
                                                                 /* draw logend lines */
      for ( i = 0 ; i < num_llines ; i++ )
          15 ( y < 0 )
              SLOUTS ("flegend text below sureen bottom");
              logend drawn - YES;
              roturn ( -1 );
          SotTG( log[1].pv );
                                                                 /* draw color block */
         affact( leg_frome_laft + LEG_FRAME_EPACE , y , leg_frome_laft + LEG_FRAME_EPACE + LEG_FV_WIDTE , y + LEG_FV_ERICET ,
         stropy( txt , leg[i].str ); /* draw string */
ixl = leg_frame_left +LEG_FRAME_SPACE + LEG_FV_WIDTE + LEG_FV2TET_SPACE;
         iy1 = y + ( chardepth / 2 );
         setTG( C LEG TRET );
         d test ( SCREEN COORDS );
        y - chardepth;
    }
    if ( DMM_alov_drawn )
show_DMM_alov_legend();
    logend drawn - YES;
hido_legend ()
                          /* erase legend from graphics screen */
    if ( legend_drawn )
        SetFG( C_BBG );
                                            /* IS THIS THE CORRECT CHEST? */
        afrect( leg frume left , leg frume bot , leg frume right , leg frume top , 0x40 );
```

```
if ( DMR_elev_drawn ) hide DMR_elev_legend();
     logend_drawn = 20;
 build_dms_elov_logend ()
                                 /* build special legend for DNA elevations */
                                         /* ADD ME LATER */
   }
 show_DMA_elev_legend ()
                                 /* draw DMA elevation legend */
                                         /* ADD 142 LATER */
   }
 hide_IMA_elev_legend ()
                                 /* erase DGA elevation legend */
   (
                                         /* ADD ME LATER */
   )
 /* end of lag.a */
 * lt.c -- ASAN GRASS map layer list/description text file manage
          BOTE: Home "layers.txt" is wired into this code.
  *************************
 finolude "grass.h"
 @include "gglobs.h"
 static char
                fam (801 :
 static FILE
                *fp;
nembef[12];
 static char
add_to_layertst ()
                                /* add new layer name to the file */
    int 1;
    if ( ( fp = fopen( "layers.txt" , "r" ) ) = NOLL ) /* first find it */
        SLOUTS ("fadd21: fopen[r] layers.txt failed");
       return ( -1 );
   falose (fp ); '
   if ( ( fp = fopen( "layers.txt" , "a" ) ) == NULL ) /* now really open it */
        SLOUTS ("?add21: fopen[a] layers.txt failed");
       return( -1 );
   /* assure layer name is uppercase */
   for ( i = 0 ; i < strlen( layersevename ) ; i++ )
if ( ( layersevename[i] >= 's' ) 66 ( layersevename[i] <= 's' ) )
ambuf[i] = layersevename[i] - 040;</pre>
       وعله
           numbef[i] = layersavename[i];
   mambef[++1] = '\0';
   fprintf( fp , "ts\n" , nembuf );
   falosa (fp );
rem_from_layertxt ()
                               /* remove a layer name from the file */
```

```
/* end of 1t.a */
   /* ADD RETTER FIRED CHECKING. SAVE WIN & VP, CHECK AGAINST NEW CHES */
   ww.d -- read winddow & viewport files, set up display perumeters
                  FILE FORGATS ARE HANDWINED INTO THIS CODE,
                   AND COMER OF ITMES IN FILES IS CRUCIAL.
    ******************************
  Science DB (str)
  #include "grass.h"
  finclude "gglobe.h"
  finalude cfost1.h>
  fincinde <eys/types.b>
  finalade <eye\etat.b>
  Hanlada cio. b
  static char
                  fnem [80] ;
  static char
                  junk[20];
  static FILE
                  *sp;
  set display paress ()
                                         /* set up display parameters */
     double h_temp, v_temp;
     /* read the window file */
     sprintf( fam, "ts\\ts", gischese, winnere);
     if ( ( fp = fopen( fnem , "x" ) ) === NOLL )
         SLOUTS ("Tww: fopen window to failed", winnesse);
         return ( -1 );
    fsonnf(fp, "4s 4d", junk, 6W_1);
fsonnf(fp, "4s 4d", junk, 6W_r);
fsonnf(fp, "4s 4d", junk, 6W_b);
fsonnf(fp, "4s 4d", junk, 6W_b);
    falose (fp);
    /* Find number of rows & columns in screen window */
    W_RTOWS = W_t - W_b + 1;
    W_mools = W_r - W1 + 1;
DB(SLOUTS("TW: M_told W_bold W_lold W_rold W_nrowseld W_ncolseld", M_t, W_b, H_l, W_r, W_nrows, W_ncols);)
    if ( | window_frame_drawn )
        SotFG( C WIN FRAME );
       aRoot(W1-1,Wb-1,Wr+1,Wt+1,Ox40);
window frame_drawa = YMS;
   /* read the viewport file */
   sprintf( famm, "%s\\%s\\%s\\veport\\%s",
     gischese, mapset, location, vpmsme);
   if ( ( fp = fopen( fnom , "x" ) ) == NULL )
       SLOUZE ("Tww: fopen vaport to failed", vpasse);
       roturn ( -1 );
   framf (fp , "ts td"
                           , junk ,
                                           &V_proj );
   fromf ( fp , "to td"
                           , junk ,
                                           AV ECGA );
  fecant ( fp , "te tif"
  SV north );
```

```
feomaf(fp, "4s %d" , junk , &V_format);

felose(fp);

/*
    * Find resolution (UMAs per pixel).
    * To assure that maps fit in the window in both directions,
    * compute it twice (using horizontal and vertical dimensions
    * and store whichever is numerically larger.
    */

v_temp = ( V_north - V_south ) / (double) ( W t - W b );
    h_temp = ( V_east - V_west ) / (double) ( W r - W l );

if ( v_temp >= h_temp )
    UMM per_pixel = v_temp;

alse
    UMM per_pixel = h_temp;

DB(SLOUTF("vw: UMM per_pixel=hlf",UMM per_pixel);)

return(0);
}

/* ead of vw.c */
```